Proceedings of the 5th Annual South–East European Doctoral Student Conference

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Edited by
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Preface

The 5th Annual SEERC Doctoral Student Conference (DSC2010) took place on September 13th and 14th in Thessaloniki, Greece, and was organised by the South-East European Research Centre.

The aim of the conference was to initiate an exchange of knowledge between young researchers and to help establish a network of scholars currently undertaking research in South-East Europe. Having identified academic isolation as a problem that many doctoral students face today, SEERC aims to bring researchers together for establishing collaborative links between disciplines, for testing the ground for innovative ideas and for engaging the wider academic community.

Building on the success of the past four conferences, this year's conference attracted a large number of submissions resulting in 61 presentations of papers. The audience of the conference expanded beyond the boundaries of South East Europe and we had presentations from UK, Greece, Germany, Poland, Czech Republic, Albania, Bulgaria, Romania, Sweden, Serbia, FYR of Macedonia, Belgium and USA, confirming the need for Doctoral Students to come together, discuss their experiences and gain external feedback to their work as well as listen to the progress and methodology of fellow PhD candidates.

The event commenced with welcome speeches from Dr Panagiotis Ketikidis (Director of SEERC Doctoral Programme and Chair of DSC2010) and Mr Nikos Zaharis (SEERC Director) and was followed by the keynote speech, given by Professor Ioannis Kallinikos of the London School of Economics (Management School-LSE). The title of the keynote speech was *"The Habitat of Information: On Institutions and Technological Governance".*

Special presentations and Workshops were presented also by Dr Paul Knepper (Department of Sociological Studies-The University of Sheffield) on *"The Use of Theory in Empirical Research"*, by Prof. Ioannis Kallinikos (Management School-LSE) on *"Single and multiple-case study research designs"* and Dr Dimitris Sanopoulos (National Coordinator of the Greek EURAXESS Service Network) on *"Building a research career in the European Research Market: EU institutional and financial tools".*

The scope of the conference was, again, multi-disciplinary spanning throughout the areas in which SEERC is doing active research and therefore it was divided into four parallel sessions:

- Enterprise and Regional Development
- Information and Communication Technologies
- Governance Politics and Society
- Risk, Well Being and Cognition

There were just over 110 submissions and of these 61 were accepted as full papers and 3 for Short presentation papers at the Information and Communication Technologies Track. The full papers were divided as follows:

- 17 for the Enterprise and Regional Development track
- 12 for the Information and Communication Technologies track
- 20 for the Governance Politics and Society track
- 12 for the Risk Well Being and Cognition track

One of the main objectives of the conference has been to provide an opportunity for PhD students to receive advice from experts in their chosen field of research. This would not have been accomplished without the participation of the invited discussants. The list of the discussants according to the research track is as follows:

Enterprise and Regional Development

Dr Leslie Szamosi (Business Administration and Economics Department, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Alexandros Kapoulas (Business Administration and Economics Department, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Konstantinos Priporas (Department of Business Administration and Marketing, University of Macedonia, Thessaloniki, Greece)

Professor Rob Huggins (Cardiff School of Management, University of Wales Institute)

Information and Communication Technologies

Dr Ilias Sakellariou (Department of Applied Informatics, University of Macedonia, Thessaloniki),

Dr Iraklis Paraskakis (Department of Computer Science, CITY College, International Faculty of the University of Sheffield, Greece)

Ms Anna Sotiriadou (Department of Computer Science, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Petros Kefalas (Department of Computer Science, CITY College, International Faculty of the University of Sheffield, Greece)

Governance Politics and Society

Assist. Prof. Christos Frangonikolopoulos (Aristotle University of Thessaloniki, Department of Media & Journalism Dept. Greece)

Dr Filippos Proedrou (Humanities & Social Sciences Division, CITY College, International Faculty of the University of Sheffield, Greece)

Ms Sara Hannam (Humanities & Social Sciences Division, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Paul Knepper (Department of Sociological Studies, The University of Sheffield, UK)

Dr Maria Xenitidou (Department of Sociology, University of Surrey, UK)

Risk Well Being and Cognition

Dr Alexandra Pentaraki (Department of Psychology, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Styliani Tsotsi (Department of Psychology, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Vassilis Barkoukis, (Department of Physical Education and Sport Science, Aristotle University of Thessaloniki, Greece)

Dr Lambros Lazouras, (Department of Psychology, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Martha Kelpi (Department of Psychology, CITY College, International Faculty of the University of Sheffield, Greece)

Dr Tatiana Tairi (Department of Psychology, CITY College, International Faculty of the University of Sheffield, Greece)

SEERC would like to thank all the above named discussants for accepting our invitation and providing their valuable feedback to the PhD students that made their presentations.

Finally, I would like to also thank the members of the Organising Committee, the authors of the papers, all the presenters and participants and our colleagues at SEERC that contributed in making DSC2010 a successful event. We are looking forward to the announcement of the 6th conference.

Panagiotis Ketikidis
Director of SEERC Doctoral Programme and Chair of DSC 2010 Conference

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ENTERPRISE, INNOVATION AND DEVELOPMENT

Customer Excellence: Towards a methodological framework for assessing the impact of customer relationship management operation

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Customer Relationship Management (CRM) has gained strong recognition in today's competitive market, while at the same time there is a lack of methodologies to assess the effectiveness of CRM processes. Though success factors like customer orientation, customer satisfaction and customer value have been discussed in literature, the underlying knowledge is not being exploited in CRM projects. This paper critically examines the literature on attributes influencing Customer Relationship, Assessment methodologies for Business Excellence and CRM system functional classification and proposes a Maturity Model for Customer Excellence as an indicator for effective CRM application. Finally, some preliminary ideas for developing a methodological framework for automatically assessing Customer Excellence by monitoring the CRM system usage are being discussed.

Keywords: CRM, Customer Relationship, Customer Excellence, Maturity, Business Excellence, Indicator

1.   Introduction

CRM postulates, that an organisation needs to actively manage its customer relation, aiming in developing the relationship along a defined customer life-cycle with the goal of conducting repetitive, profitable business (Schumacher & Meyer, 2004). Surveys highlight CRM as a key management practice for the next years (Gartner Research, Press Release, 2010), while at the same time CRM failures are reported (Preslan & Keltz, August 26, 2003). According to Meta Group (Meta Group, 2001), CRM installations often are not exploiting their full potential because of "Lack of cross-functional co-ordination", "No CRM business strategy" or "Lack of process change".

Leading CRM Risk Factors

(% citing risk in top 3)

Lack of cross-functional coordination	50%
No CRM business strategy	48%
Lack of process change	45%
Lack of executive support	40%
Poor business representation on team	32%
Inappropriate IT investments	32%

Source: Meta Group, *Leadership Strategies in CRM*, January 2000; Data Warehousing Institute (March 2001).
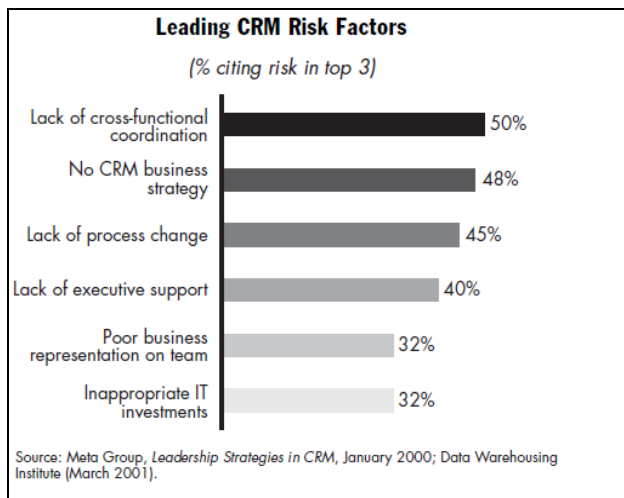
Figure 1: CRM Risk Factors

According to industry research only 16% percent of CRM installation provide real business return on investment (ROI) (Preslan L. , 2003). In a study on CRM Applications (Keltz, 2003), of the 43% of respondents who claimed to have achieved success in their CRM projects, only half were able to cite solid details about returns.

Measurement is a precondition for effective application and continuous improvement. Though CRM related success indicators and frameworks have been discussed in literature, an applicable methodology for assessing the maturity of CRM daily use has not been yet developed. Similar to very successful Quality Management Initiatives, we need to develop a scale, for

measuring CRM maturity, impact and further deployment potential, in order to
- Assess the CRM maturity of a company,
- Identify potential for improvement and suggest appropriate measures.
-

Practicioners often refer to 'Customer Excellence', when describing CRM best practices (CAS, 2008). Though well known, the term is not precisely defined. According to dictionaries excellence is 'the state or quality of excelling or being exceptionally good'. We suggest a definition derived from EFQM's definition for "Business Excellence" (EFQM, 2009).

Following the EFQM definition "Customer Excellence" should refer to "outstanding practices in managing the organization customer relationships". The idea behind our concept is an assessment procedure, run by the CRM system itself and therefore allow for permanent, automatic re-evaluation of the Customer Excellence indicator by extracting and analysing information on the daily CRM operation. Hence, the following questions have to be answered:
- Which CRM related performance indicators are relevant for Customer Excellence?
- Can we identify CRM best practices, against which we can measure CRM maturity?
- Is it possible to link the corresponding attributes and information to CRM functions, in order to provide automatic measurement?
-

In this paper we will mainly deal with the first question. In chapter 2 we will present literature review results on theories on Customer Relations and CRM indicators for Customer Excellence. In chapter 3 we will discuss existing Process Improvement models and their suitability for measuring the maturity of CRM processes. Finally, in chapter 4, we will come up with a preliminary proposal for a 'Customer Excellence Maturity Model' based on a five level framework.

2. Performance indicators for Customer Relationship Management

In the 90's Customer Relationship Management (CRM) has gained strong recognition and has been characterized as one of the three core business processes (Srivastava, 1999). At the same time researchers started a discussion on the factors impacting Customer Relations. In the following section, the most important theories on Customer Relations are presented, indicators for CRM management are explained and, finally, an over view on proposed CRM measurement frameworks is given. The purpose of this

review is to identify relevant attributes and frameworks for measuring Customer Excellence.

2.1 Customer relationship indicators

The theoretical foundation for customer relations elaborated in literature is based on three approaches:
- The approach of Thibaut and Kelley is described in detail in (Plinke W., 1998). The model determines customer relationship from the viewpoint of the customer based on two dimensions, comparison level (previous experiences) and alternatives level (comparison to best possible alternative).
- The Commitment Model of Soellner defines as inputs investment and Commitment, whereas Comitment includes loyality or psychological binding. The output of the model is the success of the customer relation (Plinke W., 1998).
- The profit theory defines the value of the customer as proportional to his profit contribution. The derived neoinstitutional paradigm for customer relations, considers information economy (Giering, 2000), transaction cost approach (Guenther, 2001) and the principal agent approach (Bruhn & Homburg, 1998).

An indicator of particular importance for successful customer relationship management is customer satisfaction. The most important theoretical models for customer satisfaction are briefly presented below:
- The C/D approach of Homburg/Krohmer is strongly related to the dissonance theory (Homburg & Krohmer, 2003). According to this theory, the customer is regularly comparing his experiences with the product or service with a specific standard and confirms or disconfirms his acceptance.
- The Kano model is distinguishing between three types of customer requirements: basic requirements (must-be) constitute a pre-condition for customer satisfaction, effort requirements (one-dimensional) are concretely demanded by the customer and attractiveness requirements that are not explicitly required, but lead to a very high customer satisfaction if fulfilled. Kano allows the development of tailored customer packages, hence it requires profound knowledge of the customer's demands (Hinterhuber, Handlbauer, & Matzler, 1997).
- Homburg (2001) describes the assimilation effect (Homburg, Kundenzufriedenheit, 2001). Based in this theory the customer is permanently adapting his expectations to reality, i.e. the quality of product or service outcome. According to the contrast theory customer judgement tends to be stronger in the case of large discrepancies between outcome and expectations (Gierl & Bartikowski, 2002). Other theories relevant for customer satisfaction include attribution, equity and the prospect theory (Homburg, Kundenzufriedenheit, 2001).

According to Belz, competence and sympathy are the cornerstones of successful customer relations (Belz, 1998). They determine the success of co-operation respectively personal relation.

Walter has identified the key role of relation promoters and customer relation teams (Walter, 1999). Relation promoters are interfaces between the different cultures of the stakeholders (in B2B relations) or simply personal contacts for the customers (in B2C relations). They have the knowledge and the ability to initiate and support execution of inter-organisational exchange processes.

Building of stable customer relation teams, co-operating and acting in different dimensions of the customer relation is also a measure that may increase the commitment of the customer, concludes Helfert (Helfert, 1999).

Several researchers have discussed the indicators that are influencing the relations between provider and customer. According to Meffert psychological factors include customer satisfaction, relation quality, trust and commitment (Meffert, 2001). Behavioral indicators include acquisition behavior, information behavior or communication behavior. They may influence customer binding in a negative or in a positive manner (Bruhn, Relationship Marketing, 2001).

2.2 CRM measurement frameworks

Customer Relationship Management (CRM) aims at improving the overall quality of the relationship with the customer. CRM is a concept that has its roots in the technology of sales force automation (SFA). The term is used since the middle of 1990s (Osarenhoe & Bennani, 2007). Today, CRM is considered as a management strategy (Osarenhoe & Bennani, 2007). The main objective of CRM has been highlighted by Gronroos [18]: "CRM is a prospective of how value is created for customers". Hence, the creation of customer value might be an important indicator for measurement of Customer Excellence.

Kincaid offers a more technical view on CRM in (Ngai, 2005): "CRM is the strategic use of information, processes, technology, and people to manage the customer's relationship with your company (Marketing, Sales, Services, and support) across the whole customer life cycle."

Meaningful indicators for evaluating the performance of CRM systems for a company with focus on a specific customer or customer segment have been provided in (Kellen 2002). Kellen is proposing that companies should self-define the measurement framework according to their specific characteristics, selecting among the following measurement categories:
1. Brand-building
2. Customer equity building

      a. Customer behavioral modeling
      b. Customer value management
3. Customer-facing operations
      a. Marketing operations
      b. Sales force operations
      c. Service center operations
      d. Field service operations
      e. Supply chain and logistic operations
      f. Web site operations
4. Leading indicator measurement
      a. Balanced scorecards
      b. Customer knowledge management

The Balanced Scorecard approach is a management method for defining Key Performance Indicators. In their early publications ((Kaplan & Norton, 1992) Norton and Kaplan have defined four relevant perspectives:

- Financial: identification of a few relevant high-level financial measures.
- Customer: identification of measures for assessing the impact of customer relations
- Business Processes: identification of measures for internal process improvement
- Learning and Growth: identification of measures for future organisation development.

In (Kim & Hwang, 2003) a BSC based approach is presented in order to evaluate the effectiveness of CRM. Kim is extending the basic KPI perspectives of balance scorecard to the CRM related categories of:

- Customer Satisfaction: binding& acquisition
- Customer Value: lifetime value
- Customer Interaction: Channel management/Operational Excellence
- Customer Knowledge: Profiling and Analysis

2.3 Discussion

Customer Relationship Management (CRM) aims at improving the overall quality of the relationship with the customer as it should provide a seamless integration of every area of business that touches the customer. At the same time, several studies reveal the poor performance of CRM implementations.

CRM success indicators have been discussed in detail in literature. They provide some meaningful measures for evaluating the performance of the company for a specific customer, such as customer satisfaction, customer loyalty, customer value, sales performance, etc. (Kellen 2002; Reinartz et al. 2004). A model for linking the different attributes together is presented in the picture below.
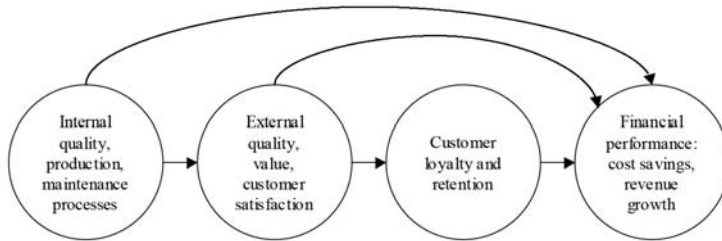
Figure 2 Cycle of Johnson & Gustafsson

Johnson & Gustafsson (Johnson & Gustafsson, 2000)describe a cyclical process that starts with identifying the overall purpose (strategy and planning), moves to qualitative customer research, builds a quality-satisfaction-loyalty survey, in order to perform a data analysis.

Summarising, existing work is largely focusing on transactional aspects and does not provide the ability to measure the excellence of the relationship with a customer as a whole. Concepts for identifying good and bad practices are missing, the presented indicators are individual and not comparative, lessons learnt are not taken into account. Concluding, existing work is creating pictures of the current situation than revealing the maturity improvement potential of the organisation. Therefore, relevant Maturity Improvement Models will be presented in the next chapter.

3. Process improvement models

Since the middle of the eighties, organisations have increasingly realized the interdependencies between quality and profitability. Due to this reason, more and more companies are adopting quality and process improvement models, aiming at enhancing the quality of organisational processes and outputs. Leading quality improvement bodies, such as the Software Engineering Institute (SEI), International Organisation for Standardization (ISO) or the European Foundation of Quality Management (EFQM) have continuously improved their models in aspects of flexibility, functionality as well as efficiency and effectiveness. In the following, some of the most popular process improvement and quality improvement models are presented on a comparative basis in order to generate an overview of the advantages and disadvantages of those models. The purpose of this overview is to find out the strengths and weaknesses of the models and to deliver an assessment for their suitability for measuring Customer Excellence.

The chapter presents the leading models, i.e. Capability Maturity Model Integration (CMMI), the ISO 9000 family and the EFQM-Excellence-Model. After a brief introduction of the functional principles, advantages and disadvantages of each model are discussed.

3.1 Capability Maturity Model Integration (CMMI)

Introduction and Background

The Capability Maturity Model Integration (CMMI) is a process improvement model for the development of products and services that can be implemented across projects, organisational divisions or entire organisations. The CMMI can be comprehensively applied to support the integration of traditionally detached organisational functions, set process improvement goals and priorities, guide quality processes, and provide reference for process assessment and appraisal. The CMMI Development Constellation is a set of best practices, appraisal methods and training courses structured around the Capability Maturity Model[1], directing at organisations that develop products and services. Compared to other maturity models that are restricted to narrow organisational functions, the CMMI offers more flexible, beyond-the-scope solutions (Software Engineering Institute Web site, 2009) . CMMI is the successor of the Capability Maturity Model (CMM), developed and maintained by the Software Engineering Institute (SEI). CMM is based on the methodology of incremental process development. In order to achieve continuous process improvement, the CMM determines the current maturity level and prescribes the necessary steps to scale up. Several variants are tailored for different business areas (Software Engineering Institute, 2009):

CMMI-DEV concentrates on process improvement programs for product and service development organisations. It contains a collection of best practices and provides a benchmark against which organisations can compare and measure their achievements (Software Engineering Institute 2009).
CMMI-ACQ is concerning with the improvement and controlling of supplier relationships. It focuses on project controlling, global sourcing, and solution acquisition.

CMMI-SVC offers a set of best practices for service providers. The core target behind the model includes the accomplishment of cost reduction, service quality improvement and schedule predictability.

Model Content

According to the SEI, most companies solely focus on separated organisational functions (i.e. procedures, people and tools). The key to qualitative and entrepreneurial success lies in the process in between these

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[1] Capability Maturity Model (CMM) is the predecessor of the CMMI. The first version was released in 1991, the model was discontinued in 2003 (Software Engineering Institute 2009)

functions: the process that holds each momentous function together. Thus improving the process automatically enhances the final organisational output (Paulk, Weber, Garcia, Chrissis, & Bush, 1993).

Process Area Components and Terminology
CMMI allows for choosing between two representations[2]: continuous representation and staged representation (Software Engineering Institute, 2009).

The **continuous representation** allows organisations to **select** one or multiple process areas to focus on. This representation uses capability levels to characterize/measure improvement relative to an individual process area.

The **staged representation** on the other side provides a set of predefined process areas to describe the improvement scheme. The improvement is characterized by maturity levels instead of capability levels. Each maturity level contains a collection of plateau-related process areas. It is of particular interest for organisations that do not have an in-depth knowledge of their processes.

Below is an illustration of the CMMI model components and their relationships. Each component is briefly explained hereinafter.
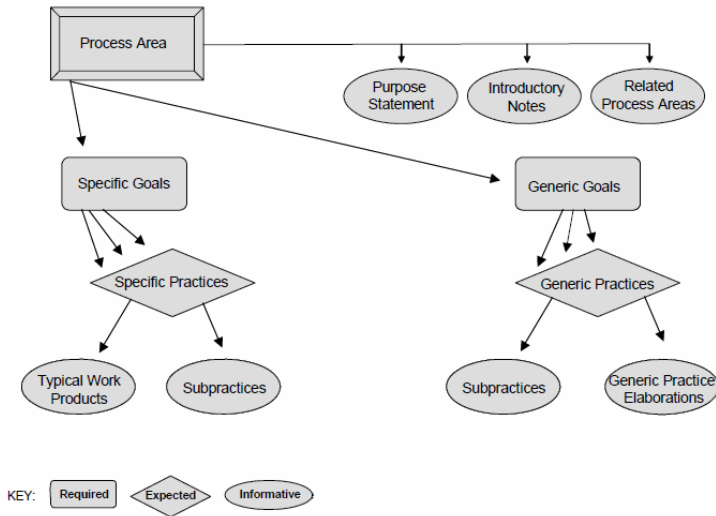
Figure 3: CMMI Components (Software Engineering Institute)

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[2] A representation allows an organisation to pursue different improvement objectives. An organisation can either choose the continuous representation or the staged representation.

A **Process Area** is a cluster of related practices in an area that, when implemented collectively satisfy a set of goals considered important for making improvement in that area. The CMMI-DEV, for instance, covers 22 process areas. Examples include Configuration management, Decision Analysis and Resolution, Project and Risk Management. Each Process area includes semantic information (purpose statement and notes) and information on related process areas.

A Process Area is satisfied by **Specific Goals** that are achieved by the execution of formulated **Specific Practices**. Similarly, **Generic Goals and Practices** refer to multiple process areas. **Generic Practice Elaborations** are informative components appearing after the generic processes in order to provide guidance on how a generic practice should be applied uniquely to the specific process area.

Maturity Levels and Capability Levels
The key elements of the CMMI are the five **Maturity levels.** Each of the five maturity levels represents a successive stage of continuous process improvement. At the same time, maturity levels serve as appraisal reference. The maturity level approach can only be applied on the staged representation. For continuous representation, six **capability levels** are used as reference for gradual improvement of processes corresponding to a given process area. However, both representations provide the same essential contents and include the same model components.
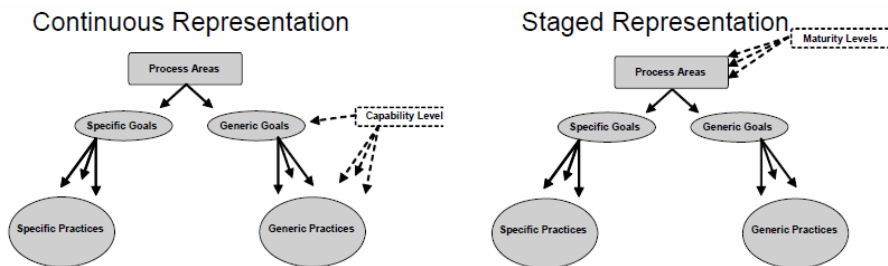
Figure 4: Structures of Continuous and Staged Representations (SEI)

Each process area and each maturity level contains a set of generic goals and generic processes, which are listed in the CMMI document together with examples.

Level	Continuous Representation Capability Levels	Staged Representation Maturity Levels
Level 0	Incomplete	N/A
Level 1	Performed	Initial
Level 2	Managed	Managed
Level 3	Defined	Defined
Level 4	Quantitatively Managed	Quantitatively Managed
Level 5	Optimizing	Optimizing

Figure 5: Comparison Capability and Maturity Levels (Software Engineering Institute)

3.2 EFQM-Excellence-Model

Introduction and Background

EFQM is based on principles of Total Quality Management (TQM), which comprise leadership, customer focus, continuous improvement, focus on facts, and everybody's participation (Dahlgaard, Kristensen, & Kanji, 1998). EFQM-Excellence-Criteria include leadership, people, strategy, partnership & resources, processes, products & services, customer results, society results, and key results. The nine criteria are integrated in three major pillars: people (referred to as "enablers"), processes, and results. People and processes are referred to as the "enablers" while the results are categorized as "results". Each of the nine criteria contains detailed descriptions of suggestive steps in the sub-criteria. Organisations can utilize the model as a diagnostic tool to identify their strengths and weaknesses and thus develop business plans (Monsted & Fons, 2002).

Model Content

The following figure illustrates the EFQM-Model fundamentals. Each of the fundamentals represents an important part in the model; however, the best result can be obtained when the fundamentals are applied collectively and cohesively (Felchlin, 2009). The priority of the fundamentals need to be customised according to the needs of the organisation.
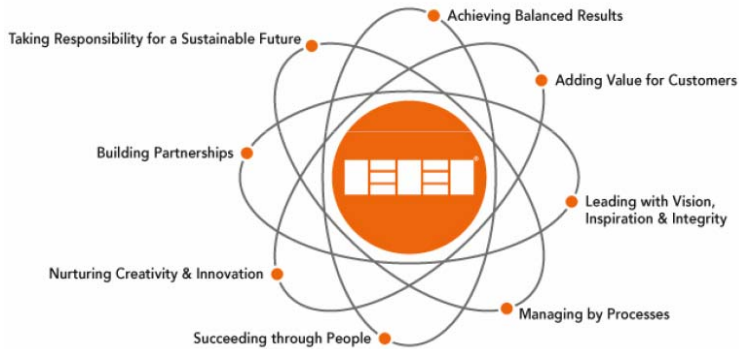
Figure 6: The Fundamental Concepts of Excellence (EFQM 2009)

Of special importance for this research is the fundamental concept of **Adding Value for Customers** (EFQM, 2009)**:** Excellent organisations know about the importance of customers and therefore strive to innovate and create value for them by understanding and anticipating their needs and expectations. In the version 2010 the focus is on clear definition and communication of value proposition and involving customers in the product and service design process.

The illustration below depicts the composition of the EFQM-Excellence-Model with the three main pillars (leadership; processes, products & services; and key results) as well as all nine criteria which form a causal chain of improvement model.
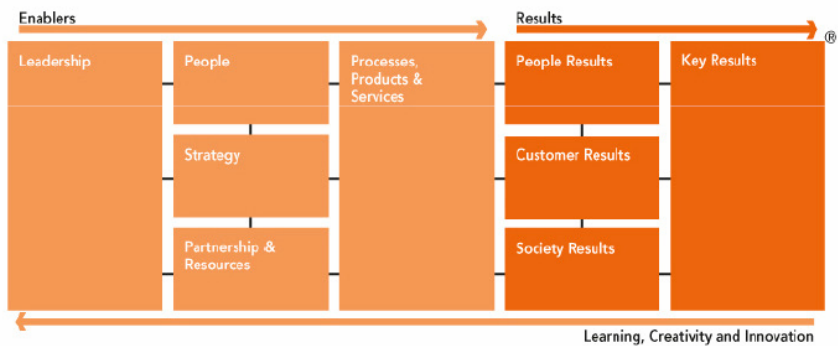
Figure 7 The EFQM Model (EFQM, 2009)

The assessment method for the EFQM-Model is referred to as the RADAR approach. The RADAR logic is based on four elements:
-    **Results:** Define the desired results

- **Approach:** Planning
- **Deployment:** Systematic and complete proceeding
- **Assessment:** Quantitative and qualitative analysis of the results
- And **Refine:** Using the results for learning, innovation and development.

In addition, EFQM provides assessment matrix, both for enablers and results, as well as prescribed balancing and weightings.

ISO 9000 Family

Introduction
The ISO 9000 family is an international standard for quality management systems (QMS) that can be implemented and operated for all organisations. The ISO 9000 family aims at improving and implementing effective quality management performance by merging fragmented, single processes to a system of interacting processes throughout the entire organization (Software Engineering Institute, 2009).

Figure 8: Assessment Balancing and Weighting (EFQM 2009)

Model Content
The ISO 9000 family comprises three documents:
ISO 9000: 2005 Quality Management Systems – Fundamentals and vocabulary: Introductory clarifications about existing requirements and fundamental terminology of ISO 9001: 2000 as well as ISO 9004: 2000 (International Organization for Standardization, 2009)

ISO 9001: 2000 Quality Management Systems – Requirements: Provides a **set of standardized requirements for a quality management system**. It is the only standard in the family against which organisations can be certified (International Organization for Standardization, 2009).

ISO 9004: 2000 Quality Management Systems – Guidelines for performance improvements: This document contains guidelines for process improvement performance that go beyond the contents of ISO 9001.
The International Organisation for Standardization (ISO) concentrates is continuously developing and updating the content of the standards. The latest version (2008) contains requirements including customer satisfaction, organisational environment, organisational benefit, etc.

Approach
ISO 9000 describes eight quality management principles that form the basis for the quality management system standards and that are used by top management (International Organization for Standardization 2009):
- Customer focus
- Leadership
- Involvement of people
- Process approach
- System approach to management
- Continual improvement
- Factual approach to decision making
- Mutually beneficial supplier relationships

The following five statements can briefly describe the approach of ISO 9000 (Software Engineering Institute 2009):
- Determine the needs and expectations of customers and other interested parties.
- Establish policies, objectives and a work environment necessary to motivate the organisation to satisfy these needs and expectations.
- Design, resource and manage a system of interconnected processes to implement the policy and attain the objectives.
- Measure and analyze the adequacy, suitability, efficiency, and effectiveness of each process in fulfilling its purpose and objectives.
- Pursue the continual improvement if the system from an objective evaluation of its performance.

3.3 Discussion

The Capability Maturity Model has been permanently enhanced, resulting to improved flexibility and availability. Of special importance is the possibility to focus on specific processes or to select a holistic viewpoint. Useful for our research is the clear definition of the classification (maturity or capability levels). Nonetheless, the model still has some drawbacks. According to Capers Jones, the fact that 'CMMI is based on experience and observation' is

pragmatic on the one hand; on the other hand, the absence of academic evidence and theories leads to blurring validity of the model (Jones, 1993). CMMI is strictly process-oriented – this might be of benefit in the context of machine processing but may lack consideration of people-related innovation and creativity.

The EFQM Model is following a holistic excellence approach, including employees and society within the improvement scheme. The continuous improvement target and it's causal structure belong to the strengths of the model. Implementers can directly see the cause and the results and strive for improvement (Monsted & Fons, 2002). An issue of particular interest is the 'prescribed' balancing and weighting in the assessment system. According to Eskildsen, a Danish research study has revealed that numerous companies are modifying the prescribed weightings to the benefit of their companies (Eskildsen, Kristensen, & Juhl, 2001). A weakness of the system is it's complexity: it prevents SMEs from applying EFQM due to lack of expertise and in-depth knowledge (Ghobadian, 1996). Useful results can only be generated if an organisation continuously and consistently works with the model over years (Seghezzi, Fahrni, & Herrmann, 2003).

The major advantage of ISO 9000 is the flexibility it provides: ISO 9000 offers a standardized, homogeneous set of procedures and requirements that can be applied to all companies due to the lack of specific processes and defined products. Therefore, management can freely design and implement their individual systems within the ISO framework (Monsted & Fons, 2002). At the same time ISO 9000 is strictly a quality assurance system lacking of CRM related practices. While process improvement models, such as the CMMI, aim at achieving continuous improvement, customer satisfaction/loyalty, and excellence, ISO 9000 narrowly concentrates on the fulfillment of contractual agreed quality assurance (Lozano, 1997).

The scope of this study is to provide information for the generation of a process and quality improvement model for the effective and efficient application of CRM-systems (measuring Customer Excellence), thus specific focus on customers is required. The CMMI solely concentrates on practices concerning project and process management and lacks customer focus. Even the CMMI-SVC document does not provide direct customer-related practices. ISO 9000 describes customer focus implicitly and insufficiently whereas the EFQM-Excellence-Model more explicitly focuses on customers and embeds "Customer Results" as one of the major elements in the Excellence Model. However, explicit practices on customer excellence are missing.

Summarising, each of the models has its advantages and disadvantages; a sensible conclusion would result in the mixture of the models in order to generate a suitable assessment/improvement system for Customer Excellence. A possible mixture could focus on extracting relevant practices from related CMMI process areas and integrating/adding these into the

customer results of the EFQM-Excellence-Model, while ISO may serve as best practice for easiness and flexibility.

4. Assessing Customer Excellence

The Maturity grade determination of CMMI in combination with the Customer relationship attributes discussed in section 2 seem to build a good indicator for assessing the effectiveness of CRM application, with other words to determine the Customer Excellence Maturity grade. According to CMMI, a maturity model is a process that describes the development of an entity over time. The potential development process is described by using a limited number of levels. At the same time, each level is characterized by specific requirements, which must be achieved in order to pass to the next level.

A preliminary proposal for the Customer Excellence Maturity Model might be based on a five level framework, as shown in the table below:

Table 1. Preliminary description of maturity levels

Description of maturity levels	
Level 1 Ad-hoc	No CRM system installed. Isolated CRM processes operational. No clear CRM strategy
Level 2 Novice	CRM processes operational. CRM strategy formally stated.
Level 3 Intermediate	Detailed CRM strategy. CRM software in place.
Level 4 Advanced	CRM software is effectively operated. CRM manager is appointed
Level 5 Excellent	CRM strategy is followed by the entire company. CRM software is operated in a highly effective manner

4.1 CRM as the source for monitoring Customer Excellence

CRM systems are IT systems that support the effective execution of the CRM processes. In order to base the maturity grade on actual, operational information, we will examine the possibility of basing the classification to a maturity level on information that can be automatically delivered by the CRM system in place.

Three main CRM system categories exist: Operational CRM is supporting the direct relations to customers or leads. Marketing CRM provides analytical functionality and campaign support and, finally, the emerging approach of collaborative CRM, allowing for holistic CRM processes across multiple business units or cross-organisational exploitation along a supply

chain or within a business ecosystem. A precise formulation of CRM objectives has been provided by Kincaid ([18] Broady-Preston)"CRM is the strategic use of information, processes, technology, and people to manage the customer's relationship with your company across the whole customer life cycle." According to literature (Plinke W., 1998), there are six main CRM processes: campaign, lead management, offer, contract and service management.

CRM system categories, CRM objectives and CRM processes give us a first classification of the information provided by CRM systems. Further work will focus on matching this information to the CRM indicators that are relevant for measuring Customer Excellence. The framework will allow companies for assessing the maturity level of their CRM processes or for measuring the success of a CRM system installation. More important, the framework will support the organisation to install improvement plans with measurable milestones on their road to Customer Excellence.

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The Impact of Foreign Higher Education on Management Practices: The Case of MBAs in Greece

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Purpose: This paper explores whether the adoption of international best practices in management education significantly influences the Greek higher educational system or rather the Greek national determinants prevail.

Research Methodology/Approach: As it is mentioned above, the aim of this paper is to investigate whether management education programmes in Greece have foreign influences in terms of their structure and content. Although there are indications of such influences, this is an issue which has not been thoroughly examined and strongly confirmed. Therefore, by adopting an exploratory mode this study attempts to investigate and confirm global influences on the structure and delivery of management education academic programmes. The research approach is based on a qualitative investigation of two particular cases of MBA programmes offered by educational institutions in Greece coming from both public and private sectors. In particular, a documentary analysis of the MBA programmes' curricula that both institutions offer as well as twelve semi-structured interviews with academics have been conducted (six from each institution). All academics teach in the MBA programmes and they are involved with soft management areas such as human resources, strategy and marketing. The main questions included in the interview refer to issues such as the criteria of selection of the content of each module, the use of specific teaching methods (i.e. case studies), the assessment criteria of students' performance, and the involvement of professional associations in the design of curricula. The

academics' educational background and academic experience and their perceptions about how these have affected the structuring and the delivery of the course are also issues that are discussed. Content analysis has been applied for the qualitative data collected.

Findings: From the analysis of the data has been confirmed that both MBA programmes examined respond to the general internationalized trend in management education. The examination of the curricula as well as the interviews conducted suggest that the MBA programmes are based on typical curricula of AngloAmerican (US/UK) business schools. The courses taught have the same structure, the bibliography used is almost the same and case studies of large MNCs are mainly used for further management analysis. The majority of academics have an Anglo-Saxon educational background which - as they stated- has strongly affected their way of designing their courses. Some academics have also mentioned that they co-operated with academics from foreign universities to structure their course. Overall, the local identity in the MBAs examined seems to be rather limited and can be identified only in terms of the universities' linkages with the state and the society, the effort of academics to share experiences from the local market, and the existence of bureaucratic procedures and other political issues that may prohibit certain developments. It is interesting to be pointed out that all academics interviewed seem to agree with the way the MBA is structured and delivered. They recognize that an Anglo-Saxon-oriented influence in business education is a reality. They also support the view that there is no strong opposition on that since there is not any alternative educational model that can be applied. They think that the way the MBA operates is suitable for the Greek reality and that the average Greek student accepts this. Overall they agree that the philosophy in management education is single and global as universities compete for the same rankings as well as for international students and Greece is no exception as it has started to attract foreign students -especially from the Balkans. Finally, despite the criticism in the MBAs and especially the Harvard MBA in relation to the financial crisis, they do not think that there is something radical to attribute to that.

Originality/value: This paper provides strong evidence suggesting that the internationalized tendency in management education seems to be incorporated in the Greek business system. Considerations can be raised on that finding, that mainly involve the applicability of "one-best-wayism" in management education and the neglecting of national factors.

Practical implications: In business environments like the Greek one where there is an urgent need for change, internationalized management education

may act as part of the institutional complementarities that will initiate modernization as long as the particularities of the Greek system are not overlooked.

Keywords: Business Schools, MBAs, Greek NBS, Internationalization

1. Introduction

The shift from the industrial economy of massive production and nation-state context to the knowledge economy of high people's skills and global focus has increased the need for training and education. In the light of "glocalization", businesses require well-educated and highly skilled managers able to provide innovative ideas and match local requirements with global challenges. The importance of education has been recognized by institutional theories and is considered an institutional driver that can shape organizational behaviour in various capitalisms. Nevertheless, skills in managerial level positions and skills in workforce are sometimes conflated in the literature; therefore there is a need to explicitly investigate skills in management.

One of the main institutions that offer managerial knowledge is the business school and the predominant degree offered in the global management education field is the MBA. Business schools globally structure their MBA programmes in a very similar way. Adding to that the increased tendency of students from various national settings to study abroad, the academics' mobility and the various affiliations between universities, an internationalized tendency in management education evokes.

Although there have been arguments of non-convergence, the literature so far suggests there exists a point of convergence, despite the existence of heterogeneities and the fact that the interdependence of cultures, structures and practices hinder the comparison between distinct national models of management education.

This tendency is more evident in economies that face some economic difficulties. South European economies provide an example of such economies and although there has not been much research on the issue, there are indications that management education programmes in those countries have strong global influences both in terms of their structure and content.

The question that arises is how the internationalized tendency in management education is incorporated in different business systems. It becomes apparent

that business schools need to respond to the glocalization trend that exists. Both global pressures and national drivers need to be taken into consideration when structuring educational programmes.

Hence, the aim of this paper is to examine how the internationalized tendency in business education has affected a specific national business system: the Greek one. The Greek case is a very interesting one as it provides an example for both South-East European and the Euro-Mediterranean capitalisms for which research is rather limited. Also, there is a current urgent need for radical changes in the Greek economy as it lags behind other European countries, scores low in terms of international competitiveness and has an entrepreneurial deficit. The entrepreneurial deficit has been partly attributed to the inefficiency of the Greek system to exploit scientific and research outcomes and to modernize its educational institutions. It is true that Greek Universities responded quite slowly to the increased demand for business studies.

Taking all the above under consideration, it is interesting to examine the status of management education in Greece. In particular, this paper explores whether the adoption of international best practices in management education significantly influences the Greek higher educational system or rather the Greek national determinants prevail. Moreover, the implications of this process will be addressed.

2. The Internationalization of Business Schools: The Globalized MBA

Increasing numbers of senior and middle managers around the globe choose MBAs for their education (Mowry, 2003). In most cases MBA graduates receive high financial rewards and their recruitment is even embedded in Google's culture (Bradshaw, 2008). Regardless of MBAs' content in various national contexts, the label MBA has not changed during its circulation process from the US to the rest of the continents (Mazza et al, 2005). MBAs internationally are based on similar curricula that are developed in Anglo-Saxon business environments such as the US and the UK (Yang and Rosa, 2001).

The MBA curricula consist mostly of general managerial courses as well as functional courses such as Finance or Information Technology and Case Studies are used as the main teaching method in MBA programmes internationally (Beech, 2006). What is quite common in all MBA programmes is that they tend to be rather general. Generality is perceived in terms of the courses offered. General and strategic managerial courses are important in all MBA curricula, even in the case of specialized MBAs such as an MBA in Human Resources or an MBA in Finance (Beech, 2006).

This generality in educational programmes is mainly attributed to the management system as well as the pattern of work organization and employment relations applied in Anglo-Saxon countries. The strong academic orientation of the Anglo-Saxon education system hinders the generation of formal intermediate skills and qualifications among the workforce. This necessitates a hierarchical pattern of work organization. Moreover, managers at various levels of organizations are responsible for both leadership and administrative functions, giving more emphasis on leadership (Lam, 2000).

Manual and management functions are divided in the education system and therefore managers with an academic background in engineering cannot stay in the higher levels of hierarchy for long (Bykjeflot, 1998; Amdam, 1996). Rather, individuals with general credentials govern careers at the top of organizational hierarchies (Whitley, 1999). Moreover, the acquisition of a general management credential as the MBA allows for the high levels of manager mobility across firms as well as across sectors, as this is the post-war Anglo-Saxon pattern (Whitley, 1999). As Bykjeflot (1998) points out: "*The archetypal industrial leader in the USA today… is the general manager"* (p.73).

The emphasis on general abstract knowledge may be explained by the fact that Anglo-Saxon economies are considered "individualistic"; they are characterized by fluid, short term relationships that impact on employment relationships (Haake, 2002). Corporate governance in Anglo-Saxon countries values the satisfaction of short-term shareholder interests' highly and treats managers as agents of the shareholders (Deakin *et al*, 2006). The implications of such corporate governance on employment relationship are low job security and high job turnover rates. Nevertheless, such characteristics provide no incentives for making education relevant to industry-specific skills (Georgen *et al*, 2007). In other words, short-termism makes non-specific organizational knowledge more valuable (Haake, 2002).

Nevertheless, such neo-liberal policies are not welcomed by all economies as some place greater emphasis on issues other than short-term profitability, such as social stability. Although evidence from employment relationships suggests that the expansion of the neo-liberal policy and its corresponding organizational practices have affected working life considerably local variations do exist (James and Wood, 2006). Countries in other capitalisms have different patterns of employment relationships and hence educational needs.

Therefore, there are considerations on whether homogenization pressures in management education will alter the distinct identity and image of various educational institutions located in different societies (Kumar and Usunier, 2001). Based on the literature on comparative capitalism (Amable, 2003; Hall and Soskice, 2001; Whitley, 1999) where distinct varieties of capitalism

or business systems, characterized by systemically specific institutional frameworks persist despite the globalization pressures, there are concerns that the global focus of Universities might distance business education from nationalism (Sharma and Judy, 1996) and lead to an "outdated one-best-wayism" in management transferred mostly from Western Universities (Howe and Martin, 1998).

Without neglecting the useful sharing of various cultural and societal perceptions about management by foreign students in an internationalized educational institution (Yang and Rosa, 2001), it is argued that differentiation rather than isomorphism in business school curricula can prove to be more beneficial and provide knowledge more relevant to management practice in different national contexts (Pfeffer and Fong, 2004). The main argument is that Universities need to respond to the needs of a complex market place that includes several types of businesses, which in turn require several types of skills. For instance, if University education in a country that consists of Small & Medium Enterprises (SMEs) does not respond to the particular educational and training needs of SMEs, then regional development will be undermined (Chatterton and Goddard, 2000).

Furthermore, it is shown that business performance is strongly affected by the way different countries are able to combine foreign expertise and their own national systems in management education. After all, as Sorge (2004) comments full convergence with any model cannot occur, no matter how influential that model might be.

In this respect, we can hardly argue that general business education will contribute greatly in the development of managerial skills, especially in business contexts that do not share the same institutional features with the Anglo-Saxon ones; nor can we argue that national traditions in management education should prevail. Rather, agreeing with Svetlicic and Cibron (1996) *"a productive combination of local and foreign expertise is probably the best"* (p.116). It seems that this should be the case for the Greek NBS.

3. The Greek Case

Greece like other Mediterranean countries and South East European countries has obvious differences with liberal economies (McMenamin, 2003) and has been characterized as one of the 'latecomers' compared to other continental countries (Ferrera, 1996). The Greek state scores low according to international measures of government effectiveness, and it is not highly capable in delivering public goods. The costly government administration, the large size of the black economy, and the high levels of corruption and tax evasion are some of the reasons that hinder Greece's international competitiveness (Featherstone, 2009). Greece also faces an "entrepreneurial deficit". During the last fifteen years the number of new

firms created annually remained stable while the number of firms that interrupted their operations increased dramatically (Papayannakis *et al*, 2008).

The Greek government has realized that Greece's entrepreneurial deficit and its overall poor performance is partly attributed to the fact that the Greek productive system is considered inefficient in exploiting scientific and research outcomes (Papayannakis *et al*, 2008) and that '*Greece has fallen behind in modernizing its educational institutions*' (Makridakis *et al*, 1997p.382), thus indicating a knowledge gap. It is a fact that Greek Universities responded quite slowly to the increased demand for business studies. Until the early 1990s only one accredited MBA programme was offered by a public University despite management education's growing popularity (Mihail and Elefterie, 2006).

Nowadays, management education in Greece is offered by Universities, Technical Universities, and other private educational institutions that operate under franchise agreements with universities in other countries (mainly the UK and the US). Both graduate and postgraduate degrees (Masters, PhD's) are offered but the Greek MBA
can be considered relatively early established as an accredited programme (Mihail and Elefterie, 2006).

The importance of management education in the organization of work has started to be recognized, and there are programmes such as the Operational Programme for Educational and Vocational Training that tend to adopt best practices of other European Universities (Papayannakis *et al*, 2008). Overall, despite some indications of foreign influence in management education and the efforts to comply with the Bologna Accord, the structure and the content of management education in Greece have not been extensively examined. Thus, this study attempts to fill this gap.

4. Research Methodology

4.1 The Approach

As mentioned above, the aim of this paper is to investigate whether management education programmes in Greece have foreign influences in terms of their structure and content. Although there are indications of such influences, this is an issue which has not been thoroughly examined and strongly confirmed. Therefore, by adopting an exploratory mode this study attempts to investigate and confirm global influences on the structure and delivery of management education academic programmes. The research approach is based on a qualitative investigation of a selection of well known MBA programmes that are offered both by public and by private educational institutions in Greece.

In particular, documentary analyses of the MBA programmes' curricula that all institutions offer as well as twelve semi-structured interviews with academics that teach in the programmes have been conducted. Content analysis with the help of Nvivo software program has been applied for the qualitative data collected.

4.2 The Sample

From approximately sixteen institutions that offer MBAs in Greece (five by Public Universities, one by a Distance Learning –Open- publicly held University, and nine by private Universities) seven were eventually selected. Two of them are offered by public Universities (Athens University of Business and Economics, University of Macedonia) and five by private universities –also referred as Colleges (ALBA Graduate Business School, City College an International Faculty of the University of Sheffield, New York College, IST College, DEI College)[3]. All the programmes selected run in two locations: in Athens (four) and in Thessaloniki (three). These are the biggest cities in Greece and almost all MBA programmes are offered there.

The interviews were conducted with six academics from the public Universities (three from the Athens University of Business and Economics, and three from the University of Macedonia) and six from the private universities (two from ALBA and one for every other institution). All academics selected are involved with soft management areas such as general management, human resources, strategy and marketing. The particular selection was made to explore whether the international trends on general and strategic managerial courses as well as on issues of strategic human resource management and organizational change –as mentioned in the literature- has had an impact on the Greek MBAs.

The selection of the sample was made using a combination of random internet search, personal acquaintance and snowball where the academics interviewed were suggesting other colleagues to the researchers. In terms of demographic elements, what is interesting to point out is that all interviewees have at least one of their degrees obtained abroad -the majority in the UK and the US[4]- and four of them are non Greeks that have been recruited by the institutions and live in Greece permanently. In terms of gender the 75% comprised of men and the 25% of women.

4.3 The Methods

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[3] Profiles of the Institutions are provided in Appendix I
[2] Short anonymous CVs of the interviewees are provided in the Appendix III

Regarding the documentary analysis, it involved the examination of the MBAs curricula. Certain criteria of analysis were identified such as the aims of the programmes, the admission procedures, the courses of the programmes, and accreditation issues. The structure of the courses syllabi was also examined for selected courses. Access to that data was provided by the academics interviewed and additional data was collected from the institutions' web-sites.

As far as it concerns interviews, they were semi-structured with open-ended questions. A semi-structured questionnaire was prepared and the main topics included referred to issues such as the criteria of selection of the content of each module, the use of specific teaching methods (i.e. case studies), the assessment criteria of students' performance, the involvement of local businesses in the design of curricula, and feedback from graduates. The academics' perceptions about the whole MBA structure and its compatibility with the Greek reality as well as their opinion about benchmarking with the best business schools internationally were important issues that were raised during the interviews.

5. Findings

5.1 Documentary Analysis

All seven MBA curricula were examined for the purposes of the analysis. As mentioned previously in the methodology, the main criteria of analysis were the aims of the programmes, the admission procedures and the student profiles, the structure of the programmes, and accreditation issues. Overall, by comparing all programmes major similarities have been identified. The analysis that follows verifies this conclusion.

Criterion 1: Main Aim of the Programme

As all institutions provide an extensive analysis of the aims of their MBA programmes, a choice was made to select the aim that institutions have chosen to put first in their brochures or web-sites. This could be considered an indication of what the institutions chose to promote the most regarding their MBA programmes. In this respect, what is common throughout all programmes is that they stress issues such as international competitiveness and environmental changes. They all suggest that their programmes aim at developing skilled managers able to compete in a global, fast-changing environment. Overall, there is no major differentiation between the institutions regarding their aims.

Criterion 2: Admission Procedures

The admission procedures of all programmes are almost identical. All programmes require an undergraduate degree in social sciences or

engineering, working experience of approximately three years, and English language certification such as TOEFL or IELTS. Executives with no undergraduate degree but with an extensive working experience are also accepted at the programmes. In addition, three of them require a GMAT (AUEB, UOM, ALBA) and one of them (ALBA) requires that Greek male candidates should have finished their military obligations.

Criterion 3: Programme Structure

By examining the structure of all programmes it becomes apparent that whether different institutions use the terms credits or courses, and independently of how they separate their academic periods (in semesters or stages) there is a number of core and elective courses that run usually throughout one academic year (in full time MBAs) and then a period of 3-5 months for the completion of either a thesis or a project. The total number of courses required for the completion of the MBA ranges between thirteen (13) and twenty one (21) leading to an average of fourteen (14) courses, while the number of core courses ranges between eight (8) and fifteen (15), leading to an average of ten (10) core courses considering all MBA programmes.

An examination of the core courses offered by all MBA programmes led to a listing of ten courses that are most commonly met in the programmes, and are presented in the following table[5].

Core Courses	AUEB	UOM	ALBA	CITY	NY	IST	DEI
Marketing Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OB & HRM	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial Management	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Business Strategy	Yes	N/A	Yes	Yes	Yes	Yes	Yes
Managerial Economics	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Operations Management	N/A	Yes	N/A	Yes	Yes	Yes	Yes
Leadership	N/A	N/A	Yes	Yes	Yes	Yes	Yes
Managerial Accounting	N/A	Yes	Yes	Yes	Yes	N/A	N/A
Information Systems	Yes	N/A	N/A	Yes	Yes	N/A	Yes
Research Methods	Yes	Yes	Yes	Yes	N/A	N/A	N/A

Table 1: Ten Most Frequent Core Courses

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[3] A full list of all core courses offered by all institutions is provided in the Appendix II.

It is important to note that by closely examining the course descriptions, topics that might not be referred as separate courses are many times incorporated in other courses or are offered as electives. For example Leadership issues are sometimes incorporated in HR courses and Managerial Accounting issues in Financial Management, while Research Methods are included in separate workshops or seminars.

Nevertheless, the purpose of this analysis was to identify which courses the institutions choose to include and promote as core courses in their curricula. Having in mind that the average core courses offered in all MBAs is ten; the list reveals that there is homogeneity between the programmes in terms of the core courses.

As seen from the table the courses of Marketing Management and Organizational Behavior/Human Resource Management (usually merged as one course) are included in all seven MBA programmes examined. Six out of the seven programmes also include the courses of Financial Management, Business Strategy, and Managerial Economics as core courses, while five out of seven offer the courses of Operations Management and Leadership. Finally, the courses of Research Methods, Information Systems and Managerial Accounting are included in the curricula of four MBAs.

Another interesting finding is that two of the institutions (ALBA and IST) focus more or at least promote more strategic issues. For instance, ALBA offers two core courses called Strategic Thinking and Strategic Management while IST offers four different core courses that all include the word strategic (Project Management: A Strategic Approach, Critical Issues in Corporate Strategy, Innovation Through Strategic Marketing, and Strategic Challenges).

Overall, there seems to be a certain emphasis on soft managerial aspects. Marketing Management and HR/OB are considered core in all programmes, there is an increased interest in Business Strategy, and Leadership is a separate core course in five out of the seven MBAs examined. Managerial Economics and Managerial Finance are also of high importance, but even in those cases the course descriptions show a tendency to emphasize on the managerial implications of those courses rather on their technical aspects.

Criterion 4: International/European Accreditation

Accreditation by the Association of MBAs (AMBA) has been granted for four of the MBAs (AUEB, ALBA, CITY, and DEI) while one (IST) is going through the application process. Accreditation is also offered by EFMD in one of the programmes (NY). The institutions that have been accredited promote that in their web-sites as a major advantage of their MBAs.

The following table summarizes the information gathered regarding the four criteria analyzed for all MBA programmes examined:

Institution	Main Aim	Admission Procedures	Structure	Accreditation
AUEB	To foster a new generation of management professionals and business executives who can respond effectively to the new realities of the business world, and lead their organizations into the new era.	Undergraduate degree TOEFL/IELTS GMAT Work Experience	Academic Periods: Five Credits Required: 42 Credits Analysis: Core courses: 20 credits (10 courses) Elective courses: 13-15 credits Personal Skills Development courses: 4 credits Full Time, 2 credits Part Time Field Study Project: 5 credits, Part Time students can select course credits instead Field study project: (real business problem) 3-4 months	Association of MBAs (AMBA)
UOM	To participate in the international economic developments firstly, by introducing to the programme of studies new and innovative learning methods in order to continuously improve and meet the requirements of the times and, secondly, by supplying the	Undergraduate degree, TOEFL/IELTS GMAT Work Experience	Academic Periods: Four Core courses: 9 Elective courses: 5 Thesis	N/A

Institution	Main Aim	Admission Procedures	Structure	Accreditation
	economy with executives capable of supporting the international competitiveness of enterprises.			
ALBA	The Program reflects the latest developments in business education and incorporates important innovations that appear for the first time in Greece. At the same time, it maintains the comprehensive nature of traditional top quality MBA programs.	Undergraduate degree, TOEFL/IELTS GMAT Work Experience Military obligations completed	Academic Periods: Two Credits Required: 40 (22 courses) Core Courses: 15 (27 Credits) Elective Courses: 4 (8 Credits) Capstone Courses: 2 (5 Credits)	Association of MBAs (AMBA)
CITY	To provide students with an understanding of organisations, their management, and the environment within which they operate	Undergraduate degree, TOEFL/IELTS Work Experience	Academic Periods: Three Core courses: 12 Elective courses: 2 Thesis	Association of MBAs (AMBA)
NY	Our MBA program offers an intensive, high-calibre education that prepares current and future managers to thrive in today's fast-paced marketplace.	Undergraduate degree, TOEFL (90)/IELTS(6.0), Work Experience	Academic Periods: Three Core courses: 9 Consultancy project	EFMD
IST	This course is aimed at suitably qualified and ambitious managers, keen to acquire the	Undergraduate degree, IELTS(6.0), Work Experience	Academic Periods: Four Core courses: 9 (135 credits) Consultancy	Application Process (AMBA)

Institution	Main Aim	Admission Procedures	Structure	Accreditation
	skills and knowledge vital to successful career development.		project (45 credits)	
DEI	Designed to provide students with specialist knowledge of international business	Undergraduate degree, TOEFL, IELTS(6.5), Work Experience	Academic Periods: Two Core courses: 9 (135 credits) Elective courses: 4 120 hours plenary sessions Research course and dissertation	Association of MBAs (AMBA)

Table 2: Comparing MBAs

5.2 Interviews with Academics

As explained in the methods section, interviews with academics teaching in the MBAs examined took place. As interviews were semi-structured a lot of different issues were raised, which however managed to be grouped in several categories. The interview analysis can be separated in two major parts. The first involves the structuring of the courses and the teaching methods and the second academics' perceptions about the structure of the MBA as a whole, its homogeneity or heterogeneity with the MBAs taught internationally and finally its relevance with the requirements of the Greek market.

Part A: Course Structure

Academics were firstly asked whether they prepare a course syllabus that is available to students. All respondents answered positively and the majority were willing to give a copy of their course syllabus. Those that did not provide a copy of the syllabus were asked to briefly describe the contents of it. The structure of all syllabi was identical: it included the aims and learning outcomes of each course, a description of all the taught entities in the order they are delivered, and suggested readings including both textbooks and journal articles.

The focus of the discussion regarding the course structure was based on the process they follow and their influences when structuring the syllabus, the readings they suggest to the students, and the use of case studies.

The Structure Process and Influences

With the exception of one interviewee where the syllabus is prepared by the academic of the UK University that the Greek institution is co-operating with, and similarly another interviewee who receives a three page document from the UK franchiser with detailed guidelines on what to include in the syllabus, the most frequent responses can be summarized in the following:

Academic Background and Research Experience

Almost all interviewees mentioned their academic background and/or research experience as a basic influence in choosing particular entities for their courses. Four of them have even answered with a percentage suggesting that their educational background affects them 100% or 99% when structuring the courses. Despite the fact that some differentiation regarding what they actually meant with that influence arose between some respondents -as some referred to it in terms of the knowledge gained in the specific field- many referred to it in terms of the mentality they gained or in terms of the academic system they were educated with as they studied abroad. As one academic mentioned *"I'm here teaching in a Greek University but I'm doing research the 'English' way"* (Academic, UOM). Similarly, there was a reference by an interviewee suggesting that *"I think I have been influenced by the US philosophy, as most of our books and journal readings were US"* (Academic, ALBA).

Textbook Based Content

Although the majority of the interviewees emphasize that they do not suggest many textbooks to their students but rather try to include a lot of article readings in their course reference list, they seem to use textbooks as basic guides on what to include in the course syllabus. One interviewee said that *"The general plan of the course is based on textbooks. There are two or three 'bible' textbooks on my topic"* (Academic, AUEB). Another interviewee said *"Since I use the same textbook with my previous colleague more or less the entities of the course are the same"* (Academic, ALBA).

Current Trends

Incorporating current trends in the course structure was another aspect that was frequently mentioned. When asked how current trends are recognized the responses ranged from the examination of internationally highly ranked business school curricula to article readings from well known journals. A characteristic example is an interviewee's statement: *"I read articles from Harvard on-line so I see what the trend is"* (Academic, NY). Another professor suggested: "*I was based in a typical syllabus of* (course name) *of a typical US business school… if you search the internet and look for syllabi of other universities, 80% of the syllabi cover the same issues"* (Academic, UOM).

Feedback from Colleagues

A final aspect that many academics mentioned as a necessary part of the course structure process is the feedback they get from their colleagues. More specifically they suggest that they initially select the content of the course and then they discuss it with colleagues no matter where they are located. Usually these are people with whom they have cooperated in the past, that have met in their Universities, people that they meet in conferences, or even textbook writers at some instances. In other words they ask for feedback from the experts no matter where they are located. As one interviewee described *"I discuss the content with two colleagues: one from Greece and one from the UK"* (Academic, City). Similarly in another case "*I sent the module guide to an internal moderator at the UK University for comments and corrections and then sent it to an external examiner in another UK University*" (Academic, IST).

Readings

The responses regarding the readings the academics suggest to their students and include in the syllabus reference list were very similar across all interviews. With the exception of two courses were there is no textbook at all, they all suggest a few textbooks and a list of journal articles. The textbooks are Anglophone (mainly US/UK) even in the case of UOM which is the only MBA taught in Greek, where the reference list includes a Greek book written by the academic himself, who suggests that this is the only Greek book for the specific course. One of the interviewees suggested "*I look for textbooks that are well established in the field and are used by respective MBA programs abroad*" (Academic, AUEB).

Regarding journal articles again they are Anglophone and mainly US and UK. The predominant journal mentioned was the Harvard Business Review- eight out of the twelve interviewees referred to it. Other journals mentioned were the Sloan Business Review, the Academy of Management Executive and other more specialized journals depending on the course (i.e. Organizational Dynamics, International Journal of HRM). Only three of the interviewees referred to journal articles from other parts of the world such as Canada, Australia, Continental Europe and India.

Case Studies and Examples

Case studies are extensively used in all MBA programmes. The majority of the academics find cases from textbooks and journals such as the Harvard Business Review. Some produce case studies themselves, based again on journal or sometimes newspaper readings. These case studies mainly involve MNCs. Greek cases are not used frequently although there are some academics that use Greek case studies that have produced themselves based on their working experience as consultants or researchers.

In the question why Greek case studies are not so frequently used the most common answer was that Greek cases are hard to find. For instance, in the question why do you use mostly examples from MNCs an academic responded: "*Let's just say that it just occurred. It just happened for example*

for me reading the Fortune magazine in a plane, and it had a very good article on Pepsi Cola for instance, I read it and thought that it could become a very good case study" (Academic, UOM)

Others had a different approach on the issue. For instance another academic suggested: *"Yes the majority of cases and examples refer on multinationals but these are businesses well known to everybody. What I mean is that if you do a case about Microsoft everybody knows it as a company and it doesn't matter that it refers to Microsoft in the US as it shows the philosophy of the company which is also applied in Microsoft Greece of course with some adjustments"* (Academic, ALBA).

Nevertheless, what is interesting to note is that the majority of the academics suggested that they might not use Greek case studies frequently but they use examples from Greek businesses during the lecture. They consider examples from the local market useful for the students. When discussing the use of international and national examples, one academic suggested *"Generally I have an international perspective in my teaching but then again it depends on the topic. For example, when talking about emerging markets it doesn't make much sense to talk about IBM"* (Academic, City).

Also, in some instances students themselves (especially in the cases of executive MBAs) need to create case studies themselves as part of their assessment. Students prepare cases from the companies they are working at, identify an issue to be resolved, suggest solutions and present them in the class. Finally, brief case studies with questions are sometimes included in the exam papers.

Part B: Examining the MBA Programme

The second part of the analysis involves very interesting findings regarding the operation of the MBA programmes and the academics' perceptions on the benefits and/or the possible drawbacks of the current MBA programmes. The relevance of a generalized Anglo-Saxon origin degree such as the MBA for the Greek market was extensively discussed. There have been several views on that but a common line of thinking amongst academics was recognized: that in any case there is not an alternative model of education in management, and that adjusting that model in the Greek reality might be the key to success.

Before moving to the discussion of academics' perceptions regarding MBA relevance it is worthy mentioning some issues regarding the overall operation and development of the MBA programmes. These issues involve the partnerships of the institutions with businesses regarding the curriculum design and the major MBA developments as recognized by academics themselves.

Partnerships with Businesses: Consultants for the MBAs?

An interesting outcome of the interview analysis is that of the cooperation of the institutions with local businesses. Two of the institutions, one public (AUEB) and one private (CITY) have official Business Advisory Councils that include academics and market representatives, who act as consultants in the operation of the MBA programmes. In addition, the ALBA institution's Management Board consists of businesses and acts as a union which has now 80 members. In the case of NY, one of the MBAs was firstly designed through the cooperation of academics and business people and then a European University was approached to provide certification. In other cases like IST, although there is no official advisory board, the institution's President has strong links with the market and considers what the market requirements are.

Nevertheless, another important and rather political issue arose during the discussion about business people acting as consultants for the MBA programmes. Although this issue arose only in one public institution, the UOM, the findings are worth mentioning. Academics suggested that such an official involvement of businesses in the University might create an institutional problem, and that there would certainly be rigorous reactions from some groups of students that they would react dynamically negative towards such an action, as they would consider it an intervention not related with the University's aims. These groups of students are usually motivated by left-political parties and tend to react in any actions that they consider as non institutionally relevant, even in the cases of guest lectures/seminars by associations such as the Association of Greek Industries. Thus there are no formal procedures and advisory boards in the University, but some professors that have links with the market take initiatives and refer to specific students that are interested for further actions (i.e. involved in projects, internships, seminars outside the University premises, and so on).

The MBA Developments

By examining all responses regarding MBA developments they can be explained in two respects. The one refers to the need to restructure the programme due to AMBA accreditation, and the other refers to the need to follow international trends in management education and incorporate certain courses in the curricula. These courses either have an international perspective, or are included in the so-called soft management courses category.

Restructuring for Accreditation

Institutions that have been accredited by AMBA have restructured or still restructuring their MBA courses. In the case of AUEB it was suggested that too many courses were included in the programme and therefore they had to merge some courses and exclude others. As an academic from the University suggested: "*OB and HR were separate courses and became one now. This occurred in the context of changing the MBA curricula and mainly because*

of ALBA requirements" (Academic, AUEB). Similarly, in the IST case the MBA programme does not run for a whole academic year as it is under the process of restructuring to receive AMBA accreditation.

Incorporating New Courses

What has been evident in all MBAs was the need to incorporate new courses in the curricula to upgrade the MBA independently of accreditation issues. These courses refer mainly to Leadership, Personal Skill Development Issues, Strategy, Change Management, and International Aspects in Management. A characteristic example is that of the AUEB where there were some separate entities called "Skill Development". But these entities were cancelled and instead three separate courses were created: Building and Developing Teams, Leadership and EQ, and Social and Group Dynamics.

Regarding Strategy, and as mentioned in the documentary analysis as well, there has been an increased emphasis in developing specific strategic courses. In addition, what is also evident from the interviews is that the teaching of all courses involves a strategic perspective. As an academic from AUEB suggested "*We try to teach with a macro perspective*" (Academic, AUEB). Similarly, quoting two more interviewees *"Strategy is an umbrella under which all HR courses are there. You cannot **not** include those issues* (Academic, NY) and "*There are specific courses that deal with strategic management in the programme, and also there are other courses that include strategic aspects. For instance you cannot talk about corporate financial management without having some discussion regarding strategy"* (Academic, City).

Change Management seems to be an important issue as well. The institutions seem to follow the current trend in business schools around organizational change and change management. Many Change Management courses have been incorporated in the MBA curricula. As one academic note: *"We have a course on change management which seems to be a "best seller". And in all cases and approaches in courses we are like that. For instance in the Managerial Economics course we teach economic dynamics and the changes that are taking place"* (Academic, AUEB).

The international aspect is also an important issue which is also evident from the inclusion of international courses in the curricula. As one academic who proposed a course on International Marketing to the programme committee in 2004 suggested: *"I considered it as an insufficiency not to have International Marketing in the programme and especially Export Marketing since we're talking about globalization, extroversion of the Greek businesses and so on."* (Academic, UOM)

To Benchmark or Not? Localizing the MBA

What is interesting to examine from the pre-mentioned analysis regarding MBA development, is why these specific developments are taking place?

Why is the AMBA accreditation so important for example? Or why is there a need to incorporate these specific soft management courses in the MBA curricula?

Is that because these institutions benchmark with the most successful business schools around the globe? And if they do, in what terms? Will benchmarking prove to be a successful strategy for the Greek MBAs or rather local elements should prevail? Academics have provided very interesting views on all these considerations.

Yes we Benchmark-Is that an Effective Strategy?
Let us start with the point where all academics agreed. In the question "Do you benchmark with well-known business schools around the globe?" The answer was definitely yes. When asked to provide examples of such schools, Harvard Business School, Stanford and INSEAD were the most frequently mentioned. A very characteristic quote is the following: "*Generally there is a trend to include courses like Leadership Development in the American business schools to cover the need for soft skills and people management…and good MBA programmes refer to people that are conscious and they have a good standing in the market. And they need such people because this the business schools' brand name. And you see courses like that everywhere. Harvard, Stanford, ESADE, Cleveland*" (Academic, AUEB)

Whether this benchmarking strategy of business schools that are mainly US proves to be effective, considering the particularities of the Greek business environment, hence the potentially different educational needs, led to very interesting conclusions. All academics agree that there is no other alternative model to benchmark with, and the majority agrees that the MBA after all provides managers with professional skills that they can eventually adjust to any working situation.

More specifically the prevailing response was that there is not an alternative model besides the Anglo-Saxon origin generalized model in management education anyway, so this is why institutions benchmark with that. Some very interesting quotes were the following: *"What are our choices? What is the alternative? Even French business schools have created Anglophone programs. After all the majority of the MBA graduates work in multinationals in the private sector. So I cannot teach them critical management and Marxist economic theory. Overall, we didn't have many choices as nobody did actually in Western Europe"* (Academic, AUEB).

Similarly, another academic has suggested: *"The influence of Anglo-Saxon in business education is a reality and there's no strong opposite model. All universities compete for the same rankings and for international students, and generally there is a homogenization tendency in business education"* (Academic, ALBA).

Many academics suggested that despite the Greek particularities, theories and processes are similar everywhere in the world. And since we are competing in a global setting, students must be aware of the theories and models that exist globally and then adjust them to their real-life working situations. They agree with the Anglo-Saxon philosophy of education in terms of the use of case-studies, group work, reading lists and so on, and they suggest that graduates gain mainly professional skills. We are presenting some of the most characteristic quotes:

"*Greek students are aware of the constraints of the Greek market. So, I believe that Greek students see MBAs as a way to get professional skills. In that sense they do get to use if not all parts of it.* "(Academic, DEI)

"*Some things that we teach them such as setting targets, work long hours, work in teams, to apply whatever they learn are very positive and relevant in all cases. In other words we teach them some things that any person that wants to work must have*" (Academic, AUEB).

"*I think that the processes are similar everywhere. For example in motivation there are some models. These models operate everywhere. What is different involves specific entities- for example what are the specific rewards that can be provided in a Greek business. But the whole system process is the same*" (Academic, NY)

"*Difficulties in terms of differences certainly exist and certainly count. But this doesn't mean that the theory does not hold. And the application of a theory means many things. Part of the application is that the student/ manager should be able to use theory to understand what is happening in the world. Maybe because of culture or because of position will not have the opportunity to change some things but theory is necessary to diagnose a situation. Independently if she/he has the power to do some things to change it or not*". (Academic, ALBA)

Should we go Local?

Despite the "we offer skills and then it's an individual responsibility" argument, some have placed emphasis on the difficulties that arise regarding the Greek reality. These difficulties are cultural, institutional, or organizational. More specifically, some academics suggest that when culture and the way of thinking is very different from the Anglo-Saxon or generally the western way of thinking, what students learn might be totally irrelevant with what they will face when they go to their home countries. One academic suggested that the major complaint of her students is that many managers in Greek businesses, even the young ones, are bad mannered and with a strict autocratic approach. This is something that the particular academic attributes to culture.

Regarding institutional constraints, these have been more evident in courses

related to human resources and they have been restricted in issues such as redundancies and the particularities of the Greek Employment Law (the existence of Collective Agreements) which however is now under a process of change and homogenization with the European one.

Organizational constraints seem to be the most prevailing. Organizational size and the lack of top managerial positions, and budget constraints are the main reasons why MBA graduates are not able to apply all the knowledge they gain in the MBA in practice. This is something that the academics realize both by their involvement in the business world and the feedback they get from students. Quoting an interviewee "…*maybe because of position, they will not have the opportunity to change some things*" (Academic, ALBA) or in the case of an HR academic "*Most students want to know about motivation as their boss might not let them do many things because of the budget for instance, so they are interested on what* **they** *can do to get the most out of their people*" (Academic, NY).

It is interesting to note that some interviewees argued that MBAs are very useful since their graduates work in large corporations where they can practice what they learn. For instance: "*The people that do an MBA are people that require that kind of education. The majority works at multinationals, banks, and large Greek corporations" (*Academic, AUEB).

But having in mind that these organizations are the minority in the Greek business environment, what are the implications there for the MBAs? What has been suggested by academics is that MBAs in Greece include the local perspective anyway as they operate in that environment, have strong linkages with the local market and academics try to adjust their lectures using examples from the Greek business world. Even in some instances, special courses have been incorporated in the curriculum such as the case in ALBA with the course of Doing business in the Balkans.

To conclude, the suggestion seems to be a blending of the general Anglo-Saxon type of education that an MBA offers with the particularities of the Greek business world. The use of examples of Greek businesses contrasted with similar cases in MNCs, and strong linkages with the local businesses are suggestions for the localization of the MBAs. The following quote provides a great summary of all the issues discussed:

"Look, there's only one type of MBA and that is the generic Anglo-Saxon. It's like Kleenex. It was originally an American product but now it's everywhere. When I take a Kleenex do I take an American product? I don't think so anymore. Do we sell ourselves (the MBA programmes) as coming from the US? The answer is yes. Why? The answer is very simple. It's marketing, it's prestige but at the end of the day am I teaching an American MBA in Greece? Then what is the difference with the MBA taught in the US? **It's the localization of it**. *The degree itself is Anglo-Saxonized but the education is mixed. If you go to Canada or to the UK then yes they are strongly linked*

*with the US MBA. But when I come down here (Greece) I look at it at a totally different perspective. Was I taught in an English system? Yes. Do I research in an English type of system? Yes. Do I use these principles? Yes. But at the end of the day if I enter the class and I start talking to these people for Coca-Cola and Burberry where are they going to be sitting? Coca-Cola and Burberry don't give them the experiences they need for the application here. So I have to talk about Hellenic Petroleum and Balkan banks. **But the premise, the foundation is still the MBA"** (*Academic, CITY).

6. Concluding Remarks

From the analysis of the data has been confirmed that all MBA programmes examined respond to the general internationalized trend in management education. The examinations of the curricula as well as the interviews conducted suggest that the MBA programmes are based on typical curricula of well known business schools internationally.

The courses taught have a similar structure, the bibliography used is mainly US/UK and case studies of large MNCs are mainly used for further management analysis. All academics have an Anglo-Saxon educational background which seems to have strongly affected their way of designing their courses. Overall, the local identity in the MBAs examined can be identified in terms of the universities' linkages with the state and the society, the effort of academics to share experiences from the local market, and the existence of other political issues.

It is interesting to point out that all academics interviewed seem to agree with the way the MBA is structured and delivered. They recognize that an Anglo-Saxon-oriented influence in business education is a reality. They also support the view that there is no strong opposition on that since there is not any alternative educational model that can be applied. They think that the way the MBA operates is suitable for the Greek reality and that the average Greek student accepts this. Overall they agree that the philosophy in management education is single and global as universities compete for the same rankings as well as for international students and Greece is no exception as it has started to attract foreign students -especially from the Balkans. Also, they all agree that MBAs offer graduates professional skills which they can adjust in any working environment.

The outcomes of this study imply that educational management programmes in Greece, despite their delay in responding to the need for business education, respond to global pressures for homogenization. At least regarding the MBA programme, national drivers seem to be of minimum influence. In both cases under examination has been confirmed that the structure and the delivery mode of the MBA seem to be very similar to the international –mainly western- standards.

Therefore, this paper provides strong evidence suggesting that the internationalized tendency in management education seems to be incorporated in the Greek business system. Considerations can be raised on that finding, that mainly involve the applicability of "one-best-wayism" in management education and the neglecting of national factors. The particularities of the Greek market require that the MBA programmes should become localized not in terms of the foundation and the premise of the MBA as a degree, but in terms of its adjustment to local educational needs. This adjustment mainly involves the inclusion of more cases and examples from the Greek market. It's more about how courses are delivered and not so much about how they are structured, since the principles are universal.

As discussed earlier in the literature, an efficient combination of foreign expertise and local needs is probably the best for every country's management education system. Especially in cases like the Greek one where there is an urgent need for change, internationalized management education may act as part of the institutional complementarities that will initiate modernization as long as the particularities of the Greek system are not overlooked.

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Appendix

Appendix I: Institution and Programme Profiles

Name: Athens University of Economics and Business (AUEB)
Ownership: public
Location: Athens
Programme: International MBA
Language: English

Name: University of Macedonia (UOM)
Ownership: public
Location: Thessaloniki
Programme: MBA
Language: Greek

Name: Alba Graduate Business School
Ownership: private
Location: Athens
Programme: MBA
Language: English

Name: CITY College an International Faculty of the University of Sheffield
Ownership: private
Location: Thessaloniki
Programme: Executive MBA
Language: English
Cooperation with: The University of Sheffield, UK

Name: New York College
Ownership: private
Location: Athens
Programme: MBA
Language: English
Cooperation with: Institut Universitaire Kurt Bosch, Switzerland

Name: IST College
Ownership: private
Location: Athens
Programme: MBA
Language: English
Cooperation with: Univerity of Hertfordshire, UK

Name: DEI College
Ownership: private
Location: Thessaloniki
Programme: International MBA
Language: English

Cooperation with: University of London External System (Lead College:
Royal Holloway)

Appendix I I: List Of Core Courses

AUEB
Marketing Management
Managerial Economics
Financial Management
Financial Accounting and Reporting
Data, Models and Decisions
Information Systems Management
Business Strategy
Business Ethics and Corporate Governance
Organizational Behavior and HRM
International Business

UOM
Research Methods
Quantitative Methods for Business Decisions
Marketing Management
Principles of Economic Theory and Policy
Management Accounting
Operations Management
Financial Management
Human Resource Management

ALBA
Leadership Development I
Business Economics
Marketing Management
Business Decisions with Data and Models
Financial Management
Management Accounting
Strategic Management
Strategic Thinking
Leadership Development II
Corporate Venturing I
Corporate Venturing
Workshops
Team Building (obligatory)
Presentation Skills Workshop

CITY
Business Economics

Corporate Financial Management
Current Issues in Management
Developing Business Processes & Operations
Developing Market Presence
Financial Reporting & Management Accounting
Information Management
Leading and Managing People
Logistics and Supply Chain Issues
Research Methods
Strategy Formulation &Business Decision
Track Specific Module I
Track Specific Module II
Understanding Organizational Behavior

NY
Organizational Behavior and Leadership
International Marketing Management
Financial Analysis
Managerial Accounting
Operation and Project Management
Information Systems for Managers
Legal and Ethical Decisions in Executive Decision Making
Mediation in the Business Environment
Global Strategy

IST
Innovation through Strategic Marketing
Strategic Challenges
Managing Financial Value Drivers
Leadership: Developing Self and Others
People Management
Collective Enterprise
Entrepreneurship and Enterprise
Appraising Organizational Performance
Project Management: A Strategic Approach
Appraising Organizational Performance
Critical Issues in Corporate Strategy

DEI
International accounting and finance
International business economics
Information systems
International human resource management
Leadership and organizations
Philosophy of management
International operations management
International marketing
International strategy

Appendix III: Academic Profiles Of Interviewees

1. AUEB
BSc Mathematics, University of Patras, Greece
MA in Psychology, University of Liverpool, UK
MPhil in Management, Cranfield University, UK
PhD in Management, University of Strathclyde, UK

2. AUEB
BA in Psychology, University of Athens, Greece
MSc in Organizational Psychology, University of Manchester, UK
PhD in Management, University of Manchester, UK

3. AUEB
MSc in Industrial Engineering, The Royal Institute of Technology, Stockholm
DBA, Henley Management College and Brunel University

4. UOM
BA in Economics, AUEB, Greece
MA in Economics, State University Stony Brook USA
PhD in Economics, State University Stony Brook USA

5. UOM
BA in Business Studies, UOM, Greece
MBA, Northtrop University, L.A., USA
MSc Technology Management, Northtrop University, L.A., USA
PhD in Management, UOM

6. UOM
BA in Business Studies, UOM, Greece
MBA, University of Sheffield, UK
PhD in Marketing, University of Sheffield, UK

7. ALBA
BSc in Psychology, University of Crete, Greece
MSc in Occupational Psychology, University of Wales, UK
Diploma in Social Science Research Methods, Cardiff University, UK
PhD in Organizational Psychology, Cardiff University, UK

8. ALBA
B.Sc. (Honors) Hellenic Military Academy
B.Sc. in Applied Mathematics, University of Athens;
MBA (Honors), ALBA Graduate Business School;

PhD Organizational Behaviour, University of Strathclyde, UK.

9.   CITY
B.Comm (Hons.) in Marketing, Carleton University Ottawa, Canada
MMS in Marketing & International Business, Carleton University Ottawa,
Canada
PhD in Organizational Behaviour and Human Resources Management,
Carleton University, Canada

10.   NEW YORK
BSc in International Business, Elmhurst College, Illinois, U.S.A.
MBA, Loyola University, Chicago, U.S.A.

11.   IST
BA in Business Administration University of Southampton, UK
MSc in Financial Management (MSc), Universidad Iberoamericana (UNIBE)
PhD Higher Education Management, University of Bath, UK

12.   DEI
BA in Communication, Culture and Media, Coventry University, UK
MA in Marketing Communication, University of Westminster, UK

The Way of Creation of Labour Legal Relation for the Civil Service (White Coller Worker) in the Republic of Albania

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Purpose: Analyses of the way of building labour legal relations for the category of white collar-workers in the Republic of Albania, through comparison with traditional systems applied in the world today for this category of clerks.

Research Methodology/Approach: In accordance with the choice of jobs system for the public administration in the Republic of Albania, as the main way of the creation of legal relations of white-collar workers is predicted the public announcement of jobs, open competition based on merit. Two systems of recruitment applicable in the world today are considered in this paper, spoils system (game system, the host); and merit system (system of skills or merits), comparing methodologies of recruitment in each of them and adjust of elements of each system in the Albanian legislation and practice.

Findings: This article serves to analyze the procedure for selection of candidates who must occupy the jobs in the civil service, analysing it on procedural terms, as well as on practical terms. From the procedural point of view we can say that the procedure of selection of candidates, on the one hand, should be transparent, open and with clear rules, but practically it should be flexible, in order to meet the specific needs of certain organs.

Value: The legal norms for the emergence of labour legal relations for the white-collar workers in the Republic of Albania, are based on the finding that: the selection of candidates for the public administration should be in accordance with two fundamental principles:
1.Provision of jobs;
2.Selection should be done on the basis of skills, through the procedural stages which are:
    a) Announcment of vacant positions
    b) Competition
    c) Complain

1. Introduction

In accordance with the choice of system of job positions for the public administration in Albania, as the main way of the birth of the legal relationship of civil servants working in public is predicted the public declaration of job positions and open competition based on merit. The competition serves to verify the qualifications and knowledge of competing candidates, as a guarantee that the administration will employ professional and qualitative staff, based on their skills.

From this rule it should be mentioned as an exception the category of political functionaries, where law 8095, dated on 03/21/1996, abolished by law no. 8549, dated on 11.11.1999, "On the status of civil servants", except the provisions for political functionaries, it is determined that political functionaries are all persons exercising political leadership positions in central and local public administration; holders and their deputies in the specialized public institutions, and persons who exercise direct support for implementation of the political functions of the aforementioned persons (a case of the system of career). [1]

The legal relationship of the work of political functionaries begins with their election or their appointment according to the terms and criteria set forth in the relevant legal provisions. Besides classic criteria of the birth of the legal relationship of employment of political officials, the criterion most applied is the political motive.

In the classical career systems, as an exception from the declaration and public competition, is the parallel movement of civil servants.

In these systems the recruitment procedure is followed for the jobs that belong to the same class and the working position. To ensure flexibility in implementation to the needs of the functioning of public administration and to strengthen the movement of employees in these systems is foreseen the possibility that employee be employed by one institution to another, without public advertisement and competition, but in the workplace with the same title. This parallel movement of employees should be distinguished from the case when the employee wants to pass from a lower working position to another on top. In this type of movement it is important the civil servants own consent.

In our law on the status of civil servants it is not known the phenomenon of lateral transfers of civil servants. If the employee requires parallel movement,

he again will be subject to the procedure of public announcement of the vacant position to cheap and open competition based on merit, according to provision 15 of law on the status of civil servants: "Mandatory transfer of civil servants should not be treated as an exception to general rules of parallel movements."[6]

To achieve compulsory transfer from one institution to another, two conditions must be fulfilled: [2]

Firstly, there should exist the temporary need of the institution that has the vacant position; it must justify the need for mandatory transfer;

Secondly, the compulsory transfer of employees to be temporary, not more than six months.

2. Methodology

2.1 The criteria and procedure of recruitment in civil service

The procedure for selection of candidates who must occupy the jobs in the civil service has a special importance for the functioning of the civil service system.

This can be analyzed from both the standpoint of procedure and in terms of practical consequences.

From the procedural point of view we can say that the procedure of selection of candidates, on the one hand, should be transparent, open and clear rules. On the other hand, it should be flexible in order to meet the specific needs of certain organs.

But, despite the fact that which criteria prevail in the case of selection of candidates, not just in terms of procedure, but much more in terms of real practice, the systems of recruitment of civil servants in general are divided into:
>   1. Spoils system (game system, the host);
>   2. Merit system (system of merit or ability).

2.1.1 Spoils System

At the basis of the spoils system, treated from the historical[7] point of view remain primarily the political criteria of selection of civil servants, namely civil and political relationship with the ruling party. The notion of "spoils"

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[6] Law 17 ofthe law "On the status of the civil servant".
[7] In USA the spoils system for the fisrt time is documented officially in 1932.

(game, prey) is used to show that the winning party that leads the government has the right of jobs` sharing among its members or sympathizers. But besides the political tutorship, in the spoils system are included even other criteria of the division of job positions such as nepotism, friendly ties, personal merits of different types etc.

Although these criteria are not related to political tutorship, the outcome they bring is the same: the positions of the civil service are not occupied by the most capable candidates and most qualified from the professional standpoint.

The system spoils is a criticized system as it creates unlimited possibilities for increased political pressure and corruption, but also it puts into question the administration control format outlined in the Basic Law and other laws of any   state.
This system enables the subjection of public interest of service to narrow personal interests of individuals, bringing a category of incapable and incompetent clerks who are settled in these open positions contrary to all standard procedures and criteria set out in law. [3]

These effects of the spoils system bring as a result dissatisfaction and mistrust of the community towards the state administration. Today in the world the recognized trend is that of eliminating all possibilities of the functioning of spoils system, which should be based not only on the selection procedure, but also wider: in the specific legal rules, such as professional grading of jobs, ratings opportunities for employees to deal with politics, to promote professional growth, etc., but also in the discourse of formal-legal boundaries always stronger in the *merit system.*

2.1.1 Merit System

With regard to the merit system, we can say that it is considered a democratic way of electing clerks, and that due to procedural accuracy applied to recruitment, ensuring fair and effective implementation of the accountability of public administration in serving the community. The merit system does not exist anywhere in the world in terms of a clean model. Especially today in modern times, when there is a trend of politicization of any state structure, the system of merit seems to be in a continuous combination with spoils system, especially in the higher state structures. Although theoretically it is propagandized the political neutrality of public service, in practice politics plays its role in assessing the merit system.[4]

2.2 Selection of civil servants in the Republic of Albania

The Constitution of the Republic of Albania, article 111, paragraph 2, states that "administration employees are appointed by competition, based on the

established criteria, except in cases provided by law".[5] The legal norms for the birth of legal relations of work for civil servants are based on the postulation that selection of candidates for public administration should be in accordance with two fundamental principles:

Firstly, the provision of job positions;
Secondly, the choice to be made on the basis of skills,

These principles focus on a single solution that is public competition to gain employee status. [8]

The law "On the status of civil servants", Article 12, contains six general conditions which every person who is recruited into the civil service must meet. Thus, a candidate for civil service employees must:
 • Be an Albanian citizen;
 • Have full capacity to act;
 • Meet legal requirements for the masters level education and professional skills necessary for the appropriate place to work;
  • Be in good health condition to perform related duties;
 • Not to be have been sentenced to a final decision of the court for committing a crime;
  • Not to have been taken against him a disciplinary action against his departure from the civil service, due to a serious disciplinary violation.

In addition to these general conditions that are binding on all persons recruited into the civil service, including anybody of law, the act of systematizing its job (as a supplement to general acts), can determine the special conditions of employment of civil servants, who are generally related to the specific needs for performance of concrete work in the place of work (high education, postgraduate, foreign languages, etc..). With regard to recruitment procedures, it is provided in the law "On the status of civil servants" and the *VKM* No. 231, dated on 05.11.2000 (as amended by *VKM* no. 196, dated on 06.04.2001 and *VKM* No. 221, dated on 05/16/2002).

The recruitment procedures of people for civil servants pass in three stages, which are:
      1. Announcement of job vacancies;
      2. Competition;
      3. Complaint.

2.2.1 Announcement of job vacancies

This procedure is performed by the personnel departments of public administration institutions, which prepare the plan of needs to accept civil

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[8] Law 111 of the Constitution of the Albanian Republic.

service next year until 31 July of each year and till 1 November it will be presented to the public administration department.

If vacancies in are created by chance in the civil service, the request is presented to the public administration department at the time of their creation. The request must include a list of available positions, associated with the description and the specific job requirements, which are determined by the department of public administration in cooperation with the relevant management personnel; specifications of necessary occupations; and the date and place where the competition will be held.

Announcement of vacancies made by the department of public administration in terms of central administration, while independent institutions carried out by personnel departments.

The announcement of vacancies is made by the department of public administration in terms of central administration, while for the independent institutions it is carried out by the personnel departments.

The announcement should contain the following information:
• Brief description of job: position, sector, directory and institution.
• General requirements for the admission to the civil service, which are:
• Be an Albanian citizen;
• Have full capacity to act;
• Meet legal requirements for the masters level education and professional skills necessary for the appropriate place to work;
• Be in good health condition to perform related duties;
• Not to be have been sentenced to a final decision of the court for committing a crime;
• Not to have been taken against him a disciplinary action against his departure from the civil service, due to a serious disciplinary violation.

The specific requirements that candidates must meet based on the job description.

List of documents that should be delivered, place and time of deliverance, which cannot be less than 30 days from the date of publication of the announcement of the competition.

The way and time when the list of candidates will be announced that will be subject to testing, fields and knowledge that will be tested, the types of tests, the relevant bibliography, date and place of holding the testing.

The announcement of competition for the vacancy is published for six continuous days in some newspapers with the largest circulation in the country, at least 40 days before testing. The publication is made by the department of public administration for the central administration institutions

and by personnel departments for independent institutions, with the expenses of the institution itself. In the announcement should be shown the general and specific requirements, which should meet the candidate, as well as the field on which the competition will be based and the relevant material.

If materials are not a free movement to all public, then the advertisement should also indicate where to find these materials concerned. The institution has a duty, when materials were not public, providing all interested parties a copy of them.

If the materials are not of a free circulation to all the public, then in the announcement should also be shown where the interested people can find these materials. The institution has a duty that when materials are not public, it provides to the interested parties a copy of them.

2.2.2 Competition

The competition process until the selection of the winning candidate passes through three stages, which are:

  Phase One: Selection of candidates that will take part in testing
  Phase Two: Holding of test
  Phase Three: Selection of the winning candidate

1) The Selection of candidates who will take part in testing

The selection of candidates is realized according to the case from the department of public administration or personnel departments, based on the verification of documents submitted by candidates, whether the set requirements are fulfilled or not (general and specific). Only the candidates who meet all the requirements will be accepted to undergo the test phase.

The names of candidates selected to take part in testing, are put in a list of alphabetical order, while those disqualified in another one, defining even the unfulfilled requirements by them.
These lists are announced publicly, according to the same rules set for the announcement of the competition.

Within two days of the announcement lists, the interested persons may present their complaints to the department of public administration institutions of central administration or personnel departments for independent institutions. These complaints should be reviewed by the commission of civil service (*KShC*) within three days of their submission. The reasonable decision of the commission of civil service is available to the interested persons.

2) Development of testing

Before the selected candidates undergo testing, the department of public administration, or personnel departments create the ad-hoc committees that will be responsible for evaluating the results of testing.

This committee consists of five members and will have the following composition:

One representative from the department of public administration or personnel departments, as to case;

Two professors from the university according to the field where testing will be determined by the appropriate dean or two well-known specialists in the area;

Two representatives from the institution that has the vacant position, appointed by the General Secretary of the institution, or by employees with a higher position than that which the testing is conducted and if not possible from the employee with experience in the institution.

The committee elects as its own president a representative of the institution of the vacant position, who takes the decisions in the presence of all members and where the guarantee of impartiality is based on Article 37 and Article 43 of the Code of administrative procedure. A list of candidates that will take part in the competition is presented to the Committee, from the government body that has made their announcement[9].

For the development of the competition it is necessary to be presented four candidates.

The development of testing shall be in writing and orally, in accordance with the description that the committee has made for the test subjects in knowledge that must hold in these areas:

a) in the specialty field and specific requirements set for the vacant position;

b) knowledge of the Constitution, the Code of administrative procedures, legislation on the functioning of public administration.

Ad-hoc committee evaluates the candidates and issues the results of the evaluation. Test scores will be calculated taking into account the report: 70% of them will constitute the test result and 30% of points will be calculated according to specific criteria of each candidate and specifically: (10%) of working experience and short term qualifications of candidates; (12%) for master degree, (8%) for specific professional skills of candidates.

Candidates with the degree "doctor" are evaluated with the highest scores of the oral test. After the assessments made by the ad-hoc committee, the list of rankings of candidates is announced and the test points for everyone of them.

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[9] Point 21 of *VKM* no. 221, dated on 16.5.2002.

This list is also announced in the bulletin of the department of the public administration.

3) Selection of winning candidates

Upon receipt of the assessments made by the ad-hoc committee, the Department of Public Administration, or personnel departments, presents to a direct superior three candidates with the best results. The superior in question also has the duty and rights to make the selection of the best candidates among the candidates presented, respecting the principles of equality and trust.

He conducts a conversation with each of them and finally chooses one of them as a civil servant. The superior takes the decision after verifying the authenticity of documents in support of which is conducted the competition.

The decision of selecting the winning candidate must be motivated in order to create the conviction of a correct selection based on merit.

Within four days of issuing the decision by the direct superior of the department of public administration or personnel department publishes the names of the winners for three continuous days in the newspapers with the largest circulation in the country.

If none of the candidates has received over 50% of the final assessment, the superior with a motivated decision and based on the principles of equality, non-discrimination and confidentiality may require repetition of application procedures for admission to the civil service. The sending of three candidates ranked first and the right of the superior to make a direct selection among them (in this selection may not always be the first ranked candidate), has caused a series of debates and has had many interpretations in practice. The purpose of this regulation is related to philosophy, which has been the foundation of law "on the civil servant status. In its drafting, it was thought that more candidacy would be presented for a vacant position and perhaps an order with points would not present as the winner the best candidate, because the distribution of points between the written test and the oral reports 70% to 30%. It was thought that some highly skilled people cannot express clearly in writing and in this way they could be penalized in ranking.

The direct superior must make an extensive interview with the candidates and assess their specific skills, given the evaluation that they have received during the testing. Of course, in the selection that makes the direct superior must also be applied the principles of trust and equality.

But the practice has shown that there is not always achieved a very high number of candidates in the testing. Thus, in 2005 the average number of participants in a trial was four, while in 2007 there was an increase in the

number of applicants to seven persons for every test[10]. This increase is explained with the increase of salaries in public administration institutions.

However there were a number of instances where only four candidates were presented in the testing, the minimum number required for the development testing. This has brought as a consequence the fact not to have much possibility of selection, raising several shades of prejudice on the recruitment procedure.

However, after the carrying out the selection from the direct superior and the publication of the name of the chosen candidate in the newspaper, the law gives the possibility to the other persons to make an complain, if they are not satisfied with the followed procedures.

4) Submission and review of complaints for the procedures of the competition in the Civil Service

For all the dissatisfaction about the way of development and results of the application, the interested persons submit their complaints before the commission within 30 working days from the publication of results.

The possibility of submitting the complaint and the application of the principle of two scales (administrative and judicial) is of great importance for the protection of the rights of unsatisfied candidates, and for the functioning of the principle that, for the job vacancies in the civil service, can all compete equally.

According to the decision no. 231, dated on 05.11.2000 (as amended), Section 22, the commission of civil service after reviewing the complaints, may decide:[6]
a) Repeal of the complaint when it does not create the confidence that there are alleged violations, then the procedure is conducted in accordance with law.
b) Acceptance of complaint when there are errors observed in the development of the competition. (In this case the complainant will be proposed to the institution for the best vacant position on the same category and level that he has applied.)
c) Annulment of the competition, when procedural violation has been noted in its conduction. (The competition will be repeated starting from the stage where the procedural irregularity was found.)

The decision of the commission of civil service for the resolution of the complaint is published and is made known to the candidates within four days by the Technical Secretariat.

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[10] Data recieved by *INSTAT*.

According to the information received in the commission of civil service, the complaints from civil servants to the commission of civil service have had a curve that has reached its peak in 2006 and has started to decline, namely: [7]

> In 2000 there were 57 complaints in *KSHC*;
> In 2001 there were 201 complaints;
> In 2002 there were 240 complaints
> In 2003 there were 229 complaints;
> In 2004 there were 287 complaints;
> In 2005 there were 337 complaints;
> In 2006 there were 702 complaints;
> In 2007 there were 380 complaints;
> In 2008 there were 193 complaints;
> In 2009 there were 103 complaints.

The years have had more leaves are usually the ones that came after general elections due to the changing of the political parties coming to power.

5) *The appointment of the winning candidate*

After the completion of the term for the submission of complaints, or after the solution the commission of civil service grants to them, the outcome of the winning candidate selection procedure is implemented by the act of the nomination, as to case, by the department of the public administration or by the department of the relevant personnel.

The act of appointment marks the birth of the legal relationship of work for the civil servants, which is not with a defined term (in contrast to the labor code, where is recognized even the work contract with defined term).

After the selection of the winning candidate, he is subject to the trial period, which seems at first glance as an employment contract with a defined period, based on its duration for a one-year period and during which he enjoys the status of civil employee.

During the trial period the employee is under the care of an older employee and is assessed for the performed work by his closest superior. The new employee is required to attend training activities, general or particular, to correctly adjust to the workplace, but also for a continuation of his professional formation.

At the end of the trial period, the superior determines, with a final decision, regarding the continuation or the termination of the legal relationship of work for that civil servant who was on trial.

The decision that the direct superior takes at the end of the trial period is made known to the employee within four days and can contain one of these options:

-Confirmation as a civil servant, when he successfully passes the trial period;

-Leaving from the civil service, if during the trial period he does not perform the assigned tasks with professionalism, so not adjusted to the job.

In this case the employee can exercise the right of complaint to the commission of civil service and then in the competent court (Article 8, Section 2 of the Law "On the status of civil servant").

For the decision takes as above the employee has the right of complaint within 30 days from the announcement of the decision from the direct superior, in the commission of civil service, which, after receiving the complaint, may decide:

- Refusal of the complaint and leaving in force the decision of the superior. In such a case the employee has the right of the status of civil servant only for the trial period.

- Repeal of the decision of the superior and the return of the employee in the workplace, when it is noted that the decision for his leaving from the civil service has been unreasonable and baseless for the way he has performed the duties during the period in question. The institution is obligated to hold the job position vacant until the final settlement of the complaint by the commission of civil service or until the end of the deadline for filing a complaint. Postponement of the trial period for six months, when it deems necessary due to the complexity of the job.

- Postponement of the trial period for six months, when it is deemed necessary due to the complexity of the job. This is a moment that causes controversies regarding the right of employees to submit a complaint in the commission of civil service, when the direct superior would decide postponement of the trial period up to six months. Of course, such a right would be in favor of employee, as the duration of the trial period for other six months holds him (the employee) under the pressure of limited time to not guaranteed work relationship.

But, referring to the law and to the above mentioned *VKM* it is noted that it is not recognized to the employee the right of complaint, in the case of the duration of the trial period for six other months, since when the commission of civil service decides to abolish the decision of the direct superior, the law says that *"reverses the decision of the direct superior and decides on **the return of the employee in the workplace**."* Namely the use of phrase "return to work" states that it is about the case when the superior has decided for the departure of the employee from the civil service and for this have the latter decision has made a complaint to the commission of civil service. [8]

Namely, the use of the phrase "return to work" states that it is about the case when the superior has decided for the leasing of the employee from the civil service and for this decision the latter has made a complaint to the commission of civil service.

3 Analysis and Recommendations

- A problem that is observed today in the administration and is raised as a concern is the conduction of the competitions in a fictitious way. According to the annual of *KSHC* it results that only in the Ministry of Interior, from 111 competitions carried out in total, the winners of these competitions were persons who had been employed by the institution, appointed before or hired with temporary work contract.

- Thus, the direct superiors, being motivated from the lack of an overall supervisory body of human resources management and taking advantage from the political situations, do not respect the procedures laid down by the legislation that regulates the employment relations for the civil servants. Under these conditions it is necessary then creation of a general supervisory structure and controlling one of the activities of human resource departments at each institution where the law applies to civil servants.

- Frequently, in the public administration is found the phenomenon of nepotism and not employment of professional and skilled people committed to carrying out their duties. The violations of the law of civil service in most cases are recorded by the lack of precise legal recruitment procedures (Article 13.14) and therefore the employees cannot be protected from the civil service structure as they do not enjoy the rights of civil servants. In this way the penalization of direct superiors for the appointments without competition, or for the development of fictitious of competition would make possible and prevent such conduct in the future, in the public administration.

- It is noted that the public administration be it central or local it mainly has:
    o Redundant equipment
    o Dysfunctional
    o Inefficient

This means that the costs for the employees do not justify the specific task they perform. Under these conditions, the Department of Public administration must continually prepare training manuals, to make aware the responsible actors, to consider the recruitment process, not simply as an organizational issue, but as a need to create functional and sustainable legal structures that respond to the institution's mission and objectives.

Specifically these manuals should contain:
    o Descriptions of new job vacancies;
    o Adaptation of employees with the new requirements of the job position;

o Binding activity of training that civil servants should be subject to, something which will help in adjusting with the job position;

- In the small units of local government the recruitment scheme finds it difficult to be implemented because there is a lack of educated applicants and it is recorded the leasing of specialists to big cities, causing the occupancy of these vacancies in an inaccurate way or not occupying these vacancies with employees of the civil service. [9] Under these conditions it is necessary to set time limits for the continuation period of the relations of civil servants working in the administrations of small governing units, and not allowing parallel movement towards bigger local units without completing this legal term.

- A necessity is even the respect of the pyramid system broad-based in determining the constituent units of the structures of the institution, which will affect the recruitment process of civil servants. In this way it is enabled the withdrawal of the most capable elements, by reducing at the same time the phenomenon of subjectivism in the process of competition.

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Driving and Restraining Forces for Clusters Development in Selected Countries in South Easern Europe (SEE): The Case of Bulgaria, Republic of Macedonia (FYROM) snd Serbia

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Purpose: In the literature a lot of discussions have been held about how successful clusters are created. Numerous examples of efficient cluster policies indicate the importance of the governmental support, but a general notion is that if clusters emerge as a result of spontaneous, bottom-up process, they will bring more sustainable effects and will better contribute towards increasing the competitiveness of SMEs. However, in both cases, literature suggests that combination of more than one factors needs to be in place, as a precondition for creating successful cluster initiatives. In addition to different factors, which can be main driving forces for cluster development, in selected countries in SEE, there are certain barriers, which often slow down or even completely jeopardize the whole process of clusters development. This research paper aims to provide an overview of different factors and barriers for cluster development in three countries in South East Europe (Bulgaria, Republic of Macedonia (FYROM) and Serbia), from a perspective of both, cluster members and non members.

Research methodology/Approach: For collecting primary data questionnaires were filled by 300 companies, 100 in each of the three countries – 50 cluster members and 50 non members**.**

Findings: Preliminary findings are that the cluster members and non members assess the importance of factors for clusters development differently, but there is no big difference in the perception of both groups about existing barriers. There are also differences in how SMEs from different countries are assessing the same issues.

Originality: This paper is part of a bigger research about the "Use of cluster approach in increasing the competitiveness of SMEs in transition countries in SEE". No research on this topic with participation of SMEs from the selected countries has been done before. Findings of this paper could assist policy makers in the selected countries to design more efficient cluster policies and adapt them to their specific economic realities.

Keywords: Clusters, SMEs, factors, barriers

1. Introduction

In the literature a lot of discussions have been held about how successful clusters are created. Spontaneously created clusters in some regions, which have proven to contribute towards increasing of competitiveness of SMEs, encouraged the policy makers to undertake measures for stimulating clusters formation. Numerous examples of efficient cluster policies indicate that appropriate governmental support can shorten the whole process from emergence of latent cluster initiatives to developing of successful competitive cluster. However, general notion is that if clusters emerge as a result of spontaneous, bottom-up process, they will bring more sustainable effects and will better contribute towards increasing the competitiveness of SMEs. In both cases though, the literature suggests that what influences the performance of the clusters is not only about choosing a bottom-up or top down approach, but about which combination of certain factors needs to be in place, as a precondition for creating successful clusters. In some regions in addition to lack of those factors, which are acting as driving forces, certain barriers exist, which often slow down or even completely jeopardize the whole process of clusters development. Those barriers act as restraining forces for both, clusters creation and their development later on. Restraining forces are considered those factors that have negative influence on creation of successful clusters. They act as barriers to cluster initiatives and answer to the question, why it is difficult for some clusters to be formed. The fact that clusters are much stronger in some regions than others with similar assets suggests that closer look in supporting factors and barriers is needed.

After providing short overview about the preconditions for cluster formation from the literature review, this research paper aims to specify different supporting factors, as well as barriers for cluster development in three countries in South East Europe (Bulgaria, Republic of Macedonia (FYROM) and Serbia).

2. Preconditions for cluster formation

According to the most prominent authority in the field of cluster approach, Michael Porter's definition [1] "National industrial clusters are formed by firms and institutions linked through vertical (buyer/ supplier) or horizontal (common customers, technology etc.) relationships, with the main players located in a single nation". The cluster approach focuses on the linkages and interdependence between actors in the network of production when producing products and services and creating innovations, and for this to happen some preconditions are needed to be in place.

These preconditions can be summarized as follows:

- *Geographical proximity:*
  Geographical proximity creates comparative advantages both for SMEs, which closely cooperate and for competitors. Pouder et al [2] writes that competitors within the cluster will benefit from agglomeration effects in a way that they will get cost advantages and will have access to resources that are not available to competitors which are not located in the cluster. The geographic concentration of clusters contributes to developing so called „pecuniary externalities" such as availability of a pool of skilled workers and concentration on demand or innovation spillovers, named as „technological externalities" (Belleflamme 2000) [3].
  Geographical proximity decreases the transaction costs (for example the costs of delivery) by the fact that all stakeholders in a value chain and other related institutions are close to each other's. For Preissl and Solimene (2003) [4] the transportation costs are reduced due to the shorter distances, which by definition reduces the risks and therefore the insurance costs. They believe also that costs for obtaining information could be significantly reduced, because of the easier access to information about cluster members and their specific competencies and reliability.

Proximity between the more specialized firms and their input suppliers and product markets enhances the flow of goods through the production system. Existence of specialised companies attracts potential cluster participants, and when they are attracted they make additional pressure for further specialisation. This phenomenon can be interpreted as "economies of specialisation" (Preissl and Solimene 2003) [5]. Sectoral specialization and

geographical concentration was perceived by Pezzeti and Primavera (2003) [6]as an instrument for creating collective reputation, which also makes the access of SMEs to local and national clusters more attractive. In addition geographical proximity, shared infrastructure and strong links between cluster firms create specific innovative environment according to Pouder et al (1996) [7]

- *Entrepreneurship culture*
  Entrepreneurship is now widely accepted as an important contributor to national and regional economic growth. It is an important component of growth, and it can be fostered in an environment that encourages collaboration among business, social, and public stakeholders. Research suggests that entrepreneurial activity is largely place-based, a product of the local culture, institutional arrangements, business environment, and the unique skills and knowledge base in a particular area. Although today entrepreneurial ventures need to be competitive in the global marketplace, their emergence and growth can often be traced back to this vital mix of social capital at the local or regional level.

- *Cooperation*
  Networking is co-operation among firms to build on their strengths and to compensate their weaknesses, exploit new markets, integrate activities, or pool resources or knowledge. This cooperation occurs more naturally and frequently within clusters. For strengthening the cooperation between the cluster firms, formal institutions like business associations, labor associations, specialized institutions, etc. have been considered very important. (Dwivedi and Varman 2003) [8]

- *Trust*
  Geographical concentration of SMEs operating in the same sector is not sufficient for producing "external economies". "The building of trust, constructive dialogue among cluster actors, exchange of information, identification of common strategic objectives, agreement on a joint development strategy and its systematic and coherent implementation require substantial efforts and commitment to common goals". (Ceglie 2003 p4) [9]. Camison (2003) [10]promotes the idea that "the industrial district as an organizational model emphasizes the contextual significance of shared social institutions and the importance of relationships based on trust and on the sustained reproduction of co-operation between intra-district agents"(p8). High level of trusts decreases also the transaction costs, reducing the costs for legal disputes and administrative procedures. In order to achieve this, rules of business conduct need to be developed on several level, together with functioning measures (both ethical and legal) that would sanction them. Raising the level of trust between businesses that are cluster members is a strategic determination in the development of clusters. However, according to Dwivedi and Varman (2003)[11] informal institutions also play

significant role in exchanging shared values and norms, which serve as a
starting point for creating work ethics and business practices.

- *Governmental support*
  Policymakers have identified industrial clusters as potential engines for
  economic growth and innovation. Cluster policy is not only an industrial
  policy but also a socio-cultural one. Policy makers should determine the
  place of the cluster policy with regard to the overall economic policy of
  the country. This is particularly important since considerable financial
  support needs to be allocated to the projects, and the capacity of each
  country to do so varies significantly (Andersson et al, 2004) [12].

According to Bruch-Krumbein and Hochmuth (2000) [13], a specific
industrial policy is understood as a cluster policy if it is oriented to the
promotion of specific regional characteristics and if it aims, in a structural
sense, to make a contribution to the further development of branch
concentration or network building blocks for clusters or to the further
development of existing clusters. A cluster policy should provide a
framework for dialogue and cooperation between firms, the public sector
(particularly at local and regional levels of government) and non-
governmental organisations (Andersson et al, 2004) [14]. In general, cluster
policy can be implemented in one of two ways: (1) assisting the development
of an existing and already established cluster, and (2) creating a new cluster
deploying external knowledge and experience (Porter, 1998)[15]. Porter
(1998) further underlines that government should not create clusters
artificially, when there are no preconditions for that, but should reinforce and
build on already established and emerging clusters as was evident in the
previous examples of Southern Italy. Both approaches to cluster policy share
some specific characteristics: focus on local systems or regions instead of on
individual companies, promotion of SMEs instead of large companies,
reliance on internal strengths, promotion of social capital as an important
factor of cluster development - encouraging trust-based relationship to
increase the flow of knowledge between local players rather than
intervening, for example, through financial incentives (Boekholt and
Thureaux 1999)[16].

3. Research methodology

For collecting primary data questionnaires were used from both, cluster
members and companies which do not belong to any cluster. In addition,
semi-structured personal interviews were used. According to Saunders et al.
(2003) [17] the decision regarding whether the questionnaires should be
used, among other things depends on number of the selected respondents the
size of the sample, and type and number of the questions to be answered.

The questionnaires were self-administered and distributed electronically and
by post to a sample size of 1000 companies, both cluster and non-cluster

members, located in three countries. Figure 4.2 graphically presents the distribution of the questionnaires

Figure 1. Distribution of the questionnaires
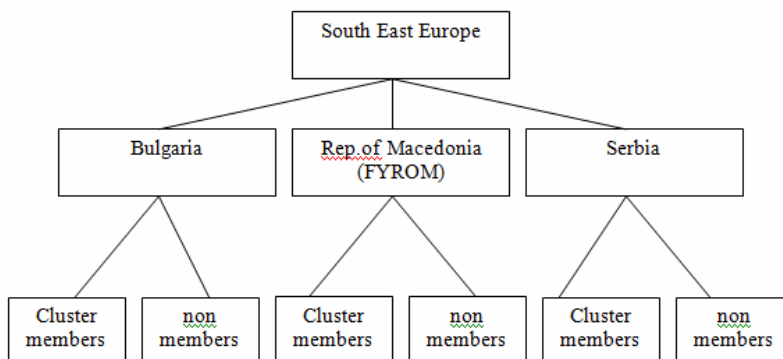
Questionnaires were filled by 300 companies, 100 in each of the three countries – 50 cluster members and 50 non members.

Information about cluster members was obtained mainly from international donor organizations, which have initiated and supported clusters in each of the selected countries. Cluster members were considered only companies which participate in a formalized cluster. Members of business associations, consortiums, or any other type of networks or alliances were not considered as cluster members, but the questionnaire provides base for comparing their performance with cluster members. Non-cluster members were identified through databases of chambers of commerce, business associations, business support organizations and governmental institutions. At the beginning of the questionnaire the respondents were asked to state if they are belonging to a formalized cluster or to describe in what other kinds of cooperation networks they are involved in. This was especially important for those cases where it was not possible to differentiate cluster from non-cluster members in advance.

Due to the limitations of quantitative methods in researching behavior in social sciences, the quantitative research was complemented by a qualitative one, realized through semi-structured interviews. Before distributing the questionnaires, a pilot test was conducted with 15 companies in order to ensure its internal validity (Saunders et al, 2003) [17]. In addition, a telephone interview was conducted with cluster supporting institutions, both government agencies and international donor organizations on the one side, and SMEs which are, or are planning to become, cluster members at the

other side. The institutions were asked three questions: a) what are the benefits that you expect companies to receive after becoming a cluster member, b) how do you measure competitiveness of the cluster members? and c) what are the criteria for making a good cluster. The companies were asked similar questions, but from their perspective.

The answers were used for giving alternatives in the designing of the questionnaire, which was distributed after the telephone interviews. The rest of the alternatives about preconditions and barriers for setting up a cluster were given based on the findings from the literature. In spite of all difficulties of conducting a qualitative interview by telephone, such as lack of reliability of received data or lack of control of non-verbal behaviour (Saunders et al., 2003) this method was chosen because only three questions were asked and the researcher has already established credibility with most of the interviewed institutions. In the process of identifying preconditions and barriers for cluster formation, the Act Frequency Approach was used as well. The act frequency approach is an approach that attempts to measure dispositions, or the tendency to behave in a certain way (Buss and Craik, 1983) [18]. The moment when the alternative answers are exhausted, further examination is not necessary.

"Semi-structured and in-depth, or non-standardized, interviews are used in qualitative research in order to conduct discussions not only to reveal and understand the "what" and the "how" but also to place more emphasis on exploring the "why" (Saunders et al.,2003, p.248) [19]. For analysing quantitative data from the questionnaires SPSS software package was used for statistical analyses.

For analysis of the questions in addition to Cronbach Alpha which was used for checking the internal validity of questions, factor analysis was used for grouping the questions. When there was a significant difference across the variables between the countries post hock analysis was used.

The whole questionnaire consists of 35 questions, divided in four sections, but for the purpose of this paper, for identifying the main driving and restraining forces for development of clusters, the following two questions were used:

1) Please indicate the importance of the following factors in cluster formation within your region (please rate from 1 = not at all important, 2 = not important, 3 = neither important not important, 4 = important, to 5 = very important)

Statement	1	2	3	4	5
There is a critical mass of SMEs in the same sector					
There is geographical proximity of members					
There is an entrepreneurial culture in the region					
There is appropriate culture of cooperation					

	1	2	3	4	5
There is sufficient level of trust					
There is a governmental support					
There is appropriate business climate					
Other (please state)					

2) Please indicate the importance of the following barriers for cluster formation within your region
(please rate from 1 = not at all important, 2 = not important, 3 = neither important   not   important, 4 = important, to 5 = very important)

Statement	1	2	3	4	5
Lack of awareness about clusters					
Lack of cooperation and trust between the stakeholders					
Inappropriate legal framework					
Small market does not allow companies to focus on core competencies					
Inappropriate cluster support policy					
Other (please state)					

After receiving the filled questionnaires, semi-structured interviews were used again with some of the respondents of the questionnaire survey were carried out to confirm the findings from the questionnaire and eventually to obtain additional, qualitative data for investigating how different factors influence cluster performance. Personal interviews were conducted with a cluster sample of the selected companies, both cluster members and non-members.

4. Findings

The Cronbach Alpha of 0.686 and 0,576 (above 0,5) proves the internal validity of both questions, indicating that there is a consistency between the answers and what is aimed to be measured is measured.

Cluster members and non members assess the importance of factors for clusters development differently but there is no big difference in the perception of both groups about existing barriers. There are also differences in how SMEs from different countries are assessing the same issues.

Regarding the driving forces, when comparing the cluster and non members in all three countries, the cluster members rate all the factors for creating clusters as more important than non members. All of the mean scores are higher compared to the mean scores of companies that are not cluster members, but this difference is specifically noticeable regarding the number of SMEs in the same sector, existence of cooperation culture and the support

from the government. There is almost no difference in how both groups perceive the importance of trust for the formation of clusters.

When analysing the situation in each country individually, the same conclusion can be taken for each of the three countries. However, there is one exception in Bulgaria, where the entrepreneurial culture, as a precondition for creation of clusters is rated higher by the companies which do not belong to any cluster and in Serbia where non cluster members rate the level of trust as more important than cluster members.

- For the variable critical mass of SMEs in certain sector, the post hock analysis indicates that there is a difference between Bulgaria and RM. The companies in RM rate this factor as more important than the companies in Bulgaria. This difference might be due to the smaller size of the country, where the number of companies by sector is much smaller than in Bulgaria.
- There is significant difference between Bulgaria and Serbia regarding the cooperation culture as a precondition for formation of clusters. In Bulgaria the questioned companies rate the existence of cooperation culture as much more important than their counterparts in Serbia.
- Regarding the importance of Governmental support perception of the companies in Serbia differs from the one in Bulgaria in RM. They consider this factor as more important than compared to companies in other two countries.

When barriers or restraining forces are considered although there is no big difference in the perception of both groups, still the cluster members considered the barriers as bigger restraining forces than non-members. Only in a case of size of the market, the non-members are of an opinion that small market more negatively influences the cluster creation, because it does not allow companies to specialize.
When semi structured interviews were conducted with 15 companies after filling the questionnaires the following additional information was received:

- When companies were stressing that lack of cooperation is one of barriers for cluster formation, they were referring to three types of cooperation:
    1) Lack of cooperation between companies and business supporting institutions as a result of lack of trust , mainly by SMEs;
    2) Lack of cooperation among companies themselves
    3) Insufficient cooperation between the private sector and education institutions – In some cases actually the cooperation exists, but is institutionalized, through forms of public-private partnerships or technology transfer centers for example.
- According to interviewed companies the lack of entrepreneurial spirit in transition was result of historical background, related to former

communist system, which was suppressing any kind of private initiative and entrepreneurial activity.

5. Conclusions

In general there is a difference between cluster members and non members in perception of supporting factors and barriers for cluster formation, which was mainly explained by the different level of understanding of the cluster concept. Not only that cluster members have more information about clusters in their region in the first place, but they have received additional knowledge through being involved in cluster activities. Also there are different responses to some of the questions, depending from which country the interviewed company comes from.

Although the basic assistance instruments that have produced successful result in the industrialized countries remain same, it is necessary to identify and promote specific cluster-oriented assistance strategies in transition countries, based on supporting driving forces and eliminating existing barriers. In addition to adapting of cluster policies to specific economic, geographic and socio-cultural conditions, cluster policies should also be adapted to the specific internal characteristic of a certain cluster in terms of its life cycle, degree of its internationalization, industrial sector and type of the product, structure of the participating companies (small, medium or large) and institutions (public or private), etc.

This paper is part of a bigger research about the "Use of cluster approach in increasing the competitiveness of SMEs in transition countries in SEE". No research on this topic with participation of SMEs from the selected countries has been done before. Findings of this paper could assist policy makers in the selected countries to design more efficient cluster policies and adapt them to their specific economic realities. In the phase of the further research the types of results that cluster-oriented assistance strategies bring in the transition countries in SEE will be examined.

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The Praxis of Greek Philotimo as Banking Ethics: a Social Networks Approach for Banking Differently in Modern Banking Cooperatives in Crete

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Purpose: To show how human organizations in "commons" (Ostrom, 2009), in the form of cooperative banks, are better described as social networks. In the case of Greek cooperative banks, the central value of Greek "philotimo" flows through network ties and is manifested as a type of virtue ethics in two-side integrity banking.

Research Methodology/Approach: This paper: (1) Introduces social network analysis (Borgatti et al, 2009; Christakis & Fowler, 2009; Wellman, 1983) to visualize a cooperative banking network via UCINET software, as the epicenter of an inclusive social network. The case study is Cooperative Bank of Chania. (2) Applies ethnomethodology (Psathas, 1990; Sacks, 1992) to approach empirical banking relations, in the form of coop bank- to- customer/member interactions and provide testimonies of corporate ethos in the reality of the Greek periphery.

Findings: Trust and integrity deriving from Greek philotimo, a unique conscious arete of honor and pride, as expressed through acts of generosity and sacrifice, are two critical traits revealed in cooperative banks in Crete. Connectedness resides in the network structure of a cooperative as "an autonomous association of persons that want to meet their common economic, social and cultural needs" (ICA, 1995). Credibility matches with the tendency to cooperate and the ritual of keeping your word without reserving it in a contract. In Greek cooperative banks, doing business is another facet of the social networking coin that keeps society operating.

Originality/value: Social network analysis in the flow of banking ethics reveals why Greek cooperative banks in Crete were resistant to the financial turbulence. A collective mindset of "what we are and what we stand for" practice represents the ethical approach to banking practice. The network fabric is responsible for holding local

communities tight together, when "value", "success", and "philotimo" are among criteria of action for individuals. Instead of normative approach to banking ethics imposed from above, the cultural approach to ethos in cooperative membership participation with philotimo proposes a balanced policy that immunized these banks from the current financial crisis.

Practical implications: Member participation-satisfaction and transactions have a contagious effect in the networked cooperative. Mutuality and social cohesion through decentralized sustainable finance function as security mechanisms in the current era of turbulence. Three are the primary attributes of social entrepreneurship that boost stability and growth for cooperatives:
(1) Deep knowledge of local environment, people, and their relations
(2) Hands-on engagement with the economic and social life for employees and customers
(3) Referral trust and solidarity, crucial for self-employed individuals and small-medium size enterprises operating in the Greek periphery.
Thus, a complete social network approach has to determine what members think of their co-operative, how they value its performance, in what ways they understand that it meets their needs, and how central a cooperative bank is in their strategic approach for self-sufficiency and sustainability in local communities.

Keywords: culture, philotimo, network, cooperative banking, homopolar ties, trust, IPA, ethics

1. Introduction

Each group and especially nation's culture reflects a core value that is at the center of their collective self and shared mindset. USA devotes itself to "freedom" (e.g. Kengor, 2004), where as in Canada the concept of "social justice" (Kernaghan, 1995) seems to prevail. In Greek culture this central value is called "philotimo" (Kostoulas, 2008; Skyftou, 2005; Hoban et al, 2004; Koutsantoni, 2004; Triandis, 2000; Mavreas et al, 1989; Kourvetaris, 1971; Vassiliou et al, 1966), a non translatable and unique conscious arete of honor and pride (with a rational capacity of logos), with the basis of empathy for others, as expressed through acts of generosity and sacrifice (building pathos).
Culture consists of the relatively specialized lifestyle, values, beliefs, artifacts, ways of behaving and ways of communicating. The notion of culture includes anything that a group has produced and developed: language, ways of thinking, art, laws, religion, communication patterns,

styles and attitudes (DeVito, 2006). Hofstede (1997) defines culture in an abstract way: "*A collective programming of the mind which distinguishes one group from another…[a] mental programming of thinking and feeling and potential acting*" (p.25). The way people define and understand issues reflect various factors that put emphasis in communication (Fisher, 2006): demographic changes (family patterns and human mobility), cultural sensitivity (from assimilation to the cultural diversity of a salad bowl), economic interdependency (international trade flows underlines cultural well-being), communication technology and competence (communication competence is usually culture- specific). Culture is not easily acquired; it is a process of growing into a society and evolves with economy. As of Jones (2007) it includes:

- learning values; i.e. dominant beliefs and attitudes,
- following rituals; i.e. collective activities,
- modeling against heroes (role models), and
- understanding symbols; i.e. myths, legends, dress, jargon, lingo etc.

These ingredients of culture are acquired since childhood. Following Hofstede (2005) and Hall (1997), cross-cultural differences, especially in business environments, are framed by four dimensions: power distance, individual and collective orientation, masculinity traits, and uncertainty avoidance towards lack of structure. If virtues are ethical messages then culture is the channel through which virtues are propagated. In the case of social networks[11], the constituent elements of individuals and their relationships lay a fertile ground of sender-receiver and interaction of ethical behavior.

2.   Greek Mindset: *Philotimo* practiced in Crete

The Greek value system since antiquity offers insights on atomistic behavior, private ownership of property and its protection, the division of labor, free foreign trade, exchange value, money and interest, and policy issues using the ideas of Hesiod, Democritus, Plato, Xenophon, Aristotle and others (Doukas, 2007; Petrochilos, 2002). Those theorists seem to converge in the concept of kalokagathia, as the ethical basis of life in the Greek city-state; Socrates' major ethical concern of "how should one live" extends to economic, social, and political relationships where justice and logic have primacy over human will. Originally, kalokagathia uses human physique (kalos) in pair with virtue, justice, and wisdom (all in agathos) that emphasizes the moral responsibility found in Homer's texts. The pragmatic content of the concept suits to a community organized on the basis of scattered individual households to defend against enemies (of the time) in a society with a "shame culture". As Greeks moved on to form cities, agathos

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11 In the case of social economy, cooperative members and their social ties can be considered as nodes of a network that supports cooperative business as a spreading phenomenon. Fowler and Christakis (2008) explain such spreading in emotional states.

is enriched with cooperativeness, temperance, civil service, justice, and wisdom (Adkins, 1960, p. 63). So, agathos politis (good citizen) became the one who contributes to the prosperity of the city in general, practicing philanthropia as a primary service explained by Contantellos (2008). Greeks considered economics (governing the oikos) as part of their inquiry on ethics, politics, and their social organization. So, while profit making is legitimate since ancient Greece and part of the atomistic system (Doukas, 2007; p. 222-223), profiteering (aishrokerdia) is punished back in mythological times: Creon in Sophocle's Antigone threatened the guard under the suspicion that he has received money to allow the burial of Polynices (Petrochilos, 1999). Greek economic thought is placed within the Mediterranean tradition that perceives the economy as embedded in a web of social and political institutions, regulated by religious and ethical norms (Baeck, 1994). The crystallization of economic thought with an ethical value system is implemented in the concept of kalokagathia. Applying this concept in developing interpersonal relationships based on mutual respect of oral commitments, trust, pride and honor the virtue of philotimo is emerging (Ioannou, 2009).

Greeks are a brother-less nation (Sartzetakis, 1985). Philotimo for Greeks is defined as an innate faculty that derives from amour propre. Philotimo may boost people to do more than what is expected. Money, beauty and power have no place when philotimo is involved, because philotimo is about offering of yourself, without expecting anything in return, and only because you want to create a wonderful moment for somebody. Hence, philotimo is a life principle for Greeks; it is interpreted as love for honor, honor "to show" for the others and honor "to receive" from the others, a characteristic of intense in small communities of the Greek periphery like Crete. It is a case of an ideal occurrence where participants generally accept a norm based in the foundation of that normative society, as defined by Habermas (1990, pp.182-183). This type of normative ethics transcends deontology of duties and rules, as well as consequentialism of the consequences of actions. In this sense philotimo closer matches with virtues and moral character that define virtue ethics. Furthermore, the three central concepts of virtue ethics: virtue, practical wisdom and eudaimonia are comprehensible, objective, and empirically truthful (Held, 1980; p.331) in various manifestations of philotimo. It is a virtue that matches with credibility, with the tendency to cooperate and the ritual of keeping your word (face and commitments) without reserving it in a contract; it is a way of life with ethos, consistent with the teleological approach of Aristotle. Philotimo has its anthropological roots in the "poetics of manhood" (Herzfeld, 1991; p. 8) that are easily observable in micro-communities of Crete and challenged by various categories of non European foreigners residing and working in contemporary Greek society (Petronoti, 2003).

Modern Greeks take *philotimo* as highly desirable; if you want Greek men to cooperate with you, then you must appeal to their *philotimo* including their personal worth; to persuade them to the degree to which what they are about

to do is "of a higher good". Questioning someone's *philotimo* is sometimes equated as being dispossessed of true Greekness (Adamson, 1995). It is also a direct counter measure to *rouspheti* – the reciprocal dispensation of favors (Clogg, 2002, pp. 4-5) – as enforced during the Turkish rule of Greece that remains as a major modernization obstacle. This attribute of personal integrity and keeping face and trust is essential for any banking practice and gets institutional support in community networks that form cooperative banks; it is a determinant of the foundation of cooperative and credit- related institutions in the European Mediterranean culture and the Greek tradition.

3. Cooperative Bank of Chania: An Atypical Bank

In an era of turbulence, domino-effects in the globalized economic environment, and interconnected institutions, established economic entities and local societies are flailing. Banking terminology is dominated by resolutions –meaning failure and sale– and a "back to basics" approach in business is widespread. But beyond Wall Street-orientation the Main Street functions has an unsighted side that underpins local communities: cooperative banking that shares a tradition of mutuality and deals with day-to-day operation as implemented by Cooperative Bank of Chania, branded as Bank of Chania (CBC) in the Greek island of Crete. Crete is a special case in the insular environment of Greece for its wealth of decentralized institutions; Crete is a region where strong communities ameliorate weak institutions, where transactional ethos is grounded in keeping your word and face and be accountable on that, as a poetic of living[12]. In the historic capital of Crete CBC is a protagonist of economic activity, scores well on social capital and defends the founding principles in its actions, values, policies, measures, expectations and outcomes, indicating that healthy networks of families and friends play an essential role in local communities. In other words CBC is build upon integrity concerns threaded in a cohesive web of members that made it resilient and less vulnerable than most of the industry.

CBC operates under the supervision of Central Bank of Greece and it is a relative small bank with paradigmatic health and leading position in the region of Crete; a solvency ratio of 28%, highly beyond the Greek national operational requirement of 10% for commercial banks and 12% for cooperative banks[13]. It is characteristic to say that National Bank of Greece[14] reports a solvency ratio of 15%. CBC retains all the guarantees for the average member and all investors in the bank's share capital, as well as

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12 Michael Herzfeld (1985), Poetics of Manhhod, Princeton University Press. Also see, Hofstede G. & Hofstede G. J. (2005), Culture and Organizations (Software of the Mind), McGraw-Hill, New York·

13 Data extracted from statistical bulletins (2008-2009) from Central Bank of Greece, Association of Cooperative Banks, and NBG.

14 National Bank of Greece (NBG) is a leading commercial banking group in South-eastern Europe and the dominant group in Greece. NBG was selected in "The Global Dow" a 150-stock index of the most innovative, vibrant and influential corporations from - around the world at http://www.djindexes.com/globaldow/ (accessed September 2009). Only leading blue-chip stocks are included in the index. Its components, like those of "The Dow", are selected by editors of Dow Jones.

institutional protection by the Greek Deposit and Investment Fund, as all the non-cooperative commercial banks. The small scale of 24 branches, 200 specialized personnel members, 40,000 deposit accounts, 8,000 credit accounts, 21,000 members, innovative technology, document management processes, and e-payment systems creates a comparative advantage. This is to say that CBC implements one-stop-shop policy, applies direct-follow-up to customers in 2-day period, reduces the cycle of borrow-lend-payback directing to medium-term loans, is almost paperless with digitizing all incoming and outgoing papers, and implements an office self-organizer via IP-phone utilities. Each employee is responsible for several tens or hundreds customers in his area and builds closeness with these customers. Thus, opportunity cost in operation is smaller than large-scale banks with CBC personnel as service centers. In terms of internal supervision, auditing is divided in reporting cycles, so compliance personnel and junior auditors generate their reports independently while having to respond to weekly auditing inquiries from the Central Bank of Greece and Greek Capital Market Commission.
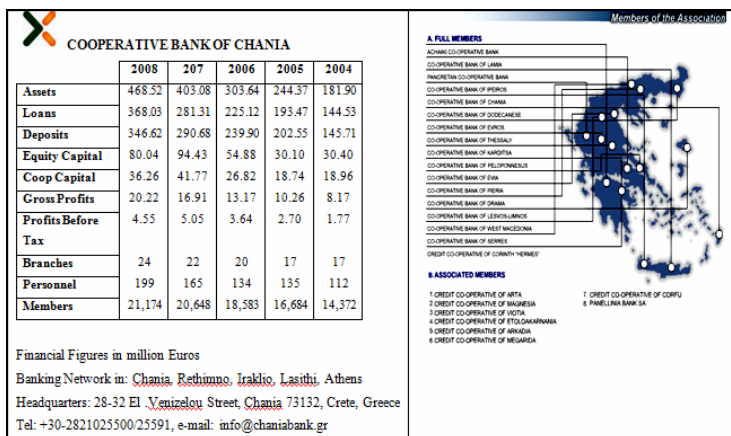
Figure 1: (a) Scope and figures of CBC in Greece (Crete and Attica) (b) The distribution of Coop Banks in 13 Greek regions[15]

Ostrom[16] (2009) argues that humans have great capabilities and are more effective than our common understanding when they are self-organized. Such a cooperative formula of polycentric self-organization is quite effective in Greece and the region of Crete; CBC has a proven record of banking efficiency, as shown in Figure 1(a). CBC is one of the 16 cooperative banks covering the 13 regional authorities of the Greek territory, as shown in

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15 Data extracted from ESTE Reports (2009) CBC Annual Reports (2004-2009).

16 As documented in the Nobel Foundation site at http://nobelprize.org/nobel_prizes/economics/laureates/2009/ (accessed on October 2009)

Figure 1(b), in a network that consists of 181 banking branches[17]. CBC operates in the region of Crete and in Athens achieving remarkable figures as the only local scope banks operating in Greece.

Greeks since antiquity put emphasis on integrity (*akeraiotita*), the primary layer of the modern *philotimo*[18]. Integrity originally reflected the public pressure to behave uprightly, a norm of the citizen. It would be unthinkable that someone without integrity - in terms of honesty, justice, truthfulness- is admired. Emphasis on goodness is encapsulated in the ancient inscription "*kalos k' agathos*"[19] on numerous Greek artifacts; it means, literally, "good and purely good" in person and good as a social being. One is esoteric for personal improvement, the other extrovert to the quality of social relations. Integrity as a purpose and criterion of good life survived in modern times in Greece as the proverbial *philotimo*, with a teleological perspective but a deontological rootage. *Philotimo* seems to gain the status of a collective conscience in modern Greece, where people no longer philosophize about it, or try to impose it on the masses, but take it for granted and assume its widespread existence.

4. Rhetorical and Moral Aspects of Cretan Philotimo in Routine Language[20]

CBC's community lives by the notion of philanthropy and philanthropia as the gist of philotimo is several occasions. In the philanthropic foundations that are operating as corporations we able to identify corporate governance issues that are compatible with the concepts of accountability, as reliability and transparency. This widespread citation of philanthropia reflects the primary issue of philotimo, as initially described. This aspect of collective self is explicitly related with approaches of trust. Trust is described (Salem, 2009; p. 73) as reflex, as a fixed expectation of culture, sometimes as being learned and situational. Trust is also considered as a resource of social capital, power, and social support. A striking definition of trust as proposed by Salem is that of an "*interaction variable leading to a probability to engage another*". This type of engagement is in the hardcore of business relationships, especially in the banking sector. Moreover in cooperative banking trust is the intangible connection that guarantees concrete

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17 The Association of Cooperative Banks of Greece (ESTE) reports 181 branches for the group of cooperative banks, in the first half of 2009 (available at http://www.este.gr/en/index.html, accessed on October 2009)

18 Psaropoulos explains the concept in his article *"From Homer to coops"* in Business File Quarterly Review No. 74, Economia (12/ 2009).

19 A full explanation is offered in George A. Petrochilos (2002), *Kalokagathia: The Ethical Basis of Hellenic Political Economy and Its Influence from Plato to Ruskin and Sen*, History of Political Economy, Vol 34, No 3, Duke University Press.

20 Proverbs are retrieved from http://greekquotations.googlepages.com/proverbs and Mantinades from http://www.inout.gr/showthread.php?p=142662, http://www.mantinades.gr/?id=10&action=mantinades. All are anonymous folk elements of spoken language.

membership relationships. The notion of *philotimo* in modern Greek mindset and deep culture is inscribed in cultural expressions such as proverbs, songs, *mantinades* and pieces of literature. *Mantinades* are folk rhyming couplets very popular in the island of Crete, where *philotimo* is a matter of personal pride and dignity:

In Greek	In English
Το κρητικό φιλότιμο και η φιλοξενία, Είν'αρετές που δίνουνε στον άνθρωπο αξία!!	Cretan filotimo and the art of hospitality are virtues that people take value of.
Όπου βοσκός και ανθρωπιά, αντρειά, κουβαρνταλίκι φιλότιμο, αισθήματα και καπετανιλίκι.	Wherever a shepheard is that is where to find manhood, generosity, filotimo, sentimentality, and captainship (hegemonic status)
Αντρας που'χει φιλότιμο και σεβασμό σηκώνει πράμα εκτός το θάνατο δεν τον εταπεινώνει	A man of filotimo deserves respect and nothing humiliates him but death

Table 1: Philotimo in Mantinades

As Campbell (1964) describes it, there is a nuance in *philotimo*, a dependability of moral respect and social asymmetry. It involves a collective sense of belonging (SIRC report, 2007; p. 3). Greeks again could be a characteristic example, adding their volunteers' movement, because they strongly view the Olympic ideal as a part of their national identity – a kind of a collective heritage.

It is striking to read a press release that CBC sent out in the summer season of 2009, a period of reasonable seasonal income for its members:

> "*We have to be realistic. Our decisions are member-oriented and our Board guidelines dictate periodical stress testing and daily screening of our customers. In all cases where the global crisis is the problem we are going to refinance. We are stepping down to our customers to discuss, consult, advice and refinance. Synergy and symmetry are the corner stones and their longevity is our strategy*".

5. Cooperative and Social Economy and International Cooperative Principles

The above examples indicate that traditional Greek value of philotimo is the origin of security and status that are very important for Greeks in business, as well as the need for self-esteem (Bourantas & Papadakis, 1996). These cultural traits explain to an extent the "small, family-owned firm" phenomenon in Greece. In such a format business ventures somehow deal more with agape and altruistic behavior, accountability, professionalism, symmetry in action and impact, and put in act the heart of survival as a "*collective entity with a common destiny*" (p.10) to rediscovering community (Muel, 2004). A reflection and extension of the socially organized business finds an exemplary application in cooperative economy and banking. The

same notion seems to be the cultural foundation recognized with a Nobel Prize for the institution of Grameen Bank with seven million borrowers. The bank started as self-financed and makes a profit with a high repayment percentage, as the borrower maintains face to their own community that guarantees normality and solvency in bank's operation. That is a characteristic example of an amalgam of social and value capital supported by a banking network that redefines entrepreneurship and social fabric in small communities, although it is lately controversial[21]. Yunus (2006) in his Nobel speech explains:

> "*Let us suppose an entrepreneur… now has two sources of motivation, which are mutually exclusive, but equally compelling: maximization of profit and doing good to people and the world. Each type of motivation will lead to a separate kind of business…Social business will be a new kind of business introduced in the market place with the objective of making a difference in the world. Investors in the social business could get back their investment, but will not take any dividend from the company. A social business will be a non-loss, non-dividend company.*"

The nature of social business is closely associated with the return of material capital not in monetary units but in units of social capital (like resources, solidarity, mutual recognition, respect and the sense of belonging and contributing), embedded in the structure of social entrepreneurship. A major type of such enterprises are the modern cooperative banks, in which money transactions are complemented with service agreements that give birth to active reciprocal relations among their members. Such banks are important in order to accomplish sustainable characteristics in a reference society, providing the material base to ensure the reproduction of monetary and social capital (Lin, 1999). Cooperative organizations in specific sectors like agriculture, with the Raiffeisen Agricu1tural Banks Association and the Irish Agricultural Organisation Society, have emerged with some considerable degree of success (Yerburgh, 1896). In 2007, after the successful capital increase the Board of CBC addressed the members visiting the new headquarters:

> "*Your trust as our members and stakeholders, who shared our vision for a lasting relation. Cultivating our roots in Chania, we embrace Crete, and we extend our message of cooperation prioritizing you, the people.*" The CEO of CBC underlined that "*in 16*

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[21] Such a challenging discussion was apparent in the EURICSE conference (at www.euricse.org).

years cooperative identity made the difference based on self-assistance, equity, solidarity and communal responsibility; with no deviation from our principles CBC evolved in competition by utilizing its size with flexibility. It was not a highway but a footpath coupled with humans as our capital."

The Cooperative Movement represents a complementary, ethically motivated, incentive of this response to capitalism and, with its ideals of local support, mutuality and democratic participation, was to become a dominant force in the 20th century and beyond. Robert Owen, the father of cooperation, defined social structures and not individuals as responsible for "*the moral degradation of capitalism*" (p.7) as explained by Donnachie (2000). These structures were and still are a realistic representation of non-urban communities in small countries, in several cases in the Mediterranean area of Europe, in regions in China and semi-structured communities in Africa. Cooperation is still in demand, but in cases like Greece it became a necessity as resource sharing, information and knowledge exchange was the only feasible answer to productivity gap, and lack of awareness of transactional frameworks in local communities. The International Cooperative Alliance (ICA) covers more than 800 million people throughout the world who are members of cooperatives.

ICA[22] defines a cooperative as

"*an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise*" (p.1).

Cooperative doctrine is identified by seven internationally recognized principles of cooperatives with a literal description in all constitutional agreements of cooperatives:

i) Voluntary and open membership
ii) Democratic control by members
iii) Member economic participation
iv) Autonomy and independence
v) Education, training and information
vi) Cooperation among cooperatives
vii) Concern for the community

Thomas (1997) following Owen's[23] organizational settings experiments, applied the above principles in defining the member entities of a cooperative

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22 ICA principles are described in http://www.ica.coop/coop/principles.html (accessed on May 2009).

23 Lord Thomas of Macclesfield was the Managing Director of The Cooperative Bank (of Manchester in England) until 1997.

in the banking context. This cooperative globe represents his notion on Inclusive Partnership Approach (IPA) to business (as shown in Figure 2):
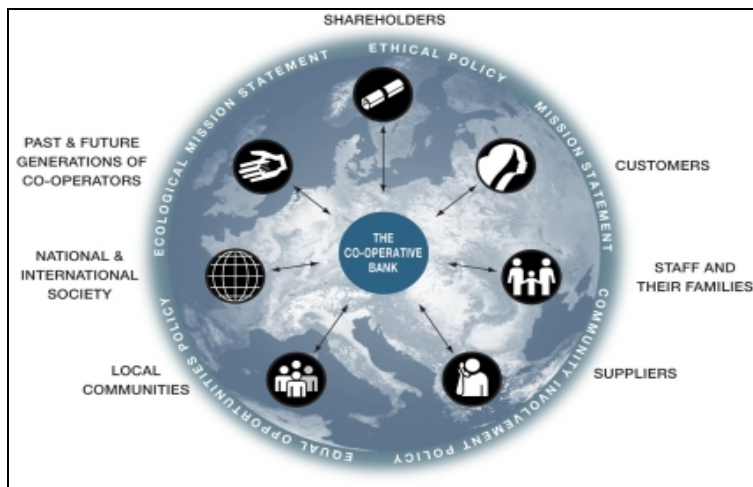
Figure 2: Cooperative bank partners as of Owen (adopted from Thomas 1997)

IPA designed above identifies seven partners to whom companies (and banks) have a responsibility: shareholders/members, customers, employees and their families, suppliers and partners, the community at large, wider/global society, past and future generations of co-operating entities. This approach was officially accepted in Greek Cooperative Network, as an institutional declaration of commitment in the Association of Cooperative Banks in Greece (1999). IPA as a notion is complemented by the principal cooperative values of self-help, self-responsibility, democracy, equality, equity and solidarity. In the tradition of their founders, Cooperative members believe in the ethical values of honesty, openness, social responsibility and caring for others. These cooperative values clearly define the network components using the traditional factory and community studies of Radcliffe-Brown, as described by Scott (2007). Using this definition of a cooperative organization, and more specifically bank, we are able to apply Wellman's network analytic principles (1983) in the context of cooperative banking. The six principles in quotes can be adjusted for a cooperative network as follows:

1. *"Ties are often asymmetrically reciprocal, differing in content and intensity".*
2. *"Ties link network members indirectly as well as directly; hence ties must be analyzed within the context of larger network structures".*

3. *"The structuring of social ties creates nonrandom networks: so boundaries, network clusters and cross linkages arise".*
4. *"Cross linkages connect clusters as well as individuals" .*
5. *"Asymmetric ties and complex networks distribute scarce resources separately".*
6. *"Networks formulate collaborative and competitive activities to secure scarce resource".*

6. Cooperative Banking in Greece: Banking in the Greek Periphery and Crete

The geographical distribution of cooperative banks in Greece is shown in Figure 3:
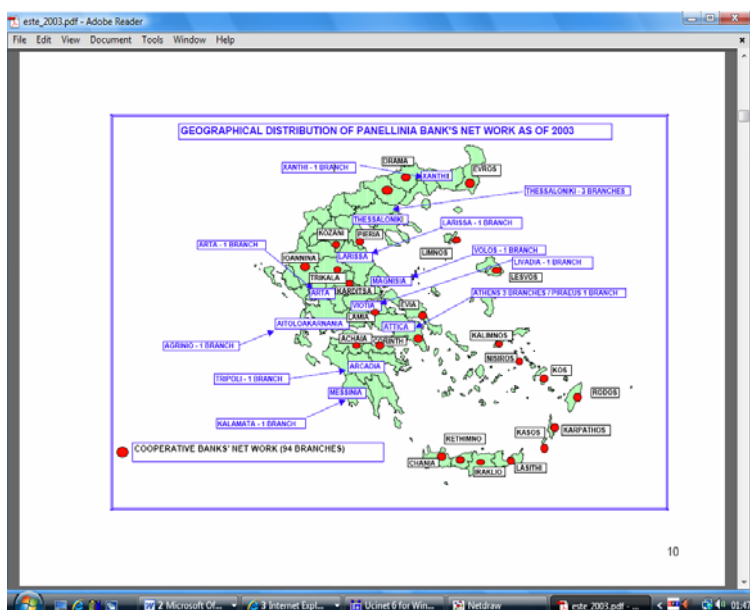
Figure 3: Geographical distribution of Coop Banking Network in Greece (ESTE, Development report, 2003)

Credit Cooperatives that obtain the permit to operate as Credit Institutions are restricted in their legal status and have to use the term "Cooperative Bank" in their name. The amount of the minimum capital required has been readjusted four times, in the last 8 years, to levels that do not correspond to the financial and demographic data of many Greek counties; banking

competition with the network of commercial banks directed regulation for the evolution of Credit Co-operatives into cooperative Banks. Cooperative banks offer banking transactions with their members only[24] and can execute all banking activities except for immediate underwriting in initial public offerings (IPOs). So, the constituent characteristic of their communal entity is the full implementation "know your customer" principle way, as proposed by the Bank of International Settlements[25] anti-laundry guidelines. The bank consists of a network of members accepted and enrolled after a screening procedure that affirms their originality and familiarity with the local community.

Cooperative reality in Greece and empirical observation extends DiMaggio's conclusions (DiMaggio and Louch, 1998) on consumer transactions; the Greek paradigm reveals that people make significant "purchases" (like money banking transactions on deposits and investment) from people (bank employees) with whom they have prior noncommercial relationships, as members in a society (banking cooperative) they trust. Banking transactions with social contacts is effective because it embeds exchanges in a web of obligations and reciprocity, based on a common accepted constitution. Alexopoulos (2006) examined the performance of Greek Cooperative banks and their importance for the development of the local areas they serve. The decade of the 1990's can be regarded as the one in which Greek cooperative banks have emerged and made their first successful steps. Three credit co-operatives, at the beginning of the decade, were evolved into Cooperative banks in 1992 when the legal framework provided such an opportunity. After the year 2000 there were 17 cooperative banks, all located at provincial towns. Within the first 10 years they have managed to build their apex institutions, a national association and their "central" bank[26] (ESTE development report, 2003). From an economic point of view, cooperatives effectively reduce market barriers that would typically impede groups (occupational or special interest groups) in developing and transformational countries from fully participating in the economic arena (Schram et al, 2007). Also, cooperatives fight against usury (profiteering from interest), a common practice in the Greek market after WWII.

In the same notion, cooperative banks offer these efficiencies as part of the membership privileged package that is shared as a "homopolar" bond (give-take-contribute) among members (it is there for everyone and everyone contributes). Their membership and active transaction-participation become

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24 A more flexible legal framework was introduced with the Law 3601/2007, following which non- members are accepted as clients under a special license agreement granted by the Central Bank of Greece.

25 Described in their publications at http://www.bis.org/publ/cmtpubl.htm (accessed on March 2009).

26Central Bank of Greece oversees the cooperative network with the same legal terms as the commercial sector. Legislation provisions for open capital, non-public traded banks is described in Laws: 1667/1986, 3483/2006, 3601/2007, and 3606/2007. Also, the Central Bank of Greece in its capacity of the European Central Bank branch has the authority to publish regulatory acts like Governor's Acts *2258/2.11.93, 2413/9.7.97, 2420,12.9.97, 2471/10.4.01, 2587/2007, 2588/2007, 2589/2007, 2590/2007, 2591/2007, 2592/2007, 2593/2007, 2594/2007, 2595/2007, 2596/2007, 2577/2006, 2595/2007, and 2597/200* that ratify the supervisory standards of Basel II Accord in the Greek legal framework.

their common tie that is strengthened by the amount of time (these banks have extended banking hours), emotional intensity in terms of dependability (bank to customer) and reciprocal service (members complete their transactions and reciprocate benefit with deposits and bank services that illustrate their preference). Cooperative banks in Greece would be capable to retain their ability to influence the financial markets and the development process in the extent of which they would create "*a strong link with local people*" (Alexopoulos, 2006, p.183) in a sustainable way. In ethical terms, cooperative banks challenge *philotimo* of local communities and promote it as a value incentive. In other words, cooperatives are user-owned (users finance the cooperative), user-controlled (an elected Board of Directors serves as the liaison between the membership and management) and user-centered (members benefit when patronage funds are returned to members based on the amount of business conducted with the cooperative[27]). Scram et al (2007) argues that trust is likely to be built and strengthened when the

> "*business is owned by those who use its services, is governed by elected leaders who are users, is locally-owned and controlled and whose customers democratically elect their policy body*" (p.5)

Homophily is cultivated in two dimensions creating social capital (Lin, 1999): similarity on interest, transaction demands and ethics among members of society, and institutional familiarity with the notion of "being in cooperation" and synergy that dictates acceptance and use of other non-financial cooperative organizations in the same society (as a token of preference and customer solidarity; shop from the union and from independent external chains/brands). Cooperatives, in many respects, are just like other banks. The important difference is that these are the only banks that give customers transparency in how their money is managed; most importantly for Brooke et al (2000) "*by encouraging their input into the ongoing development of bank's ethical policy*" (p.12).

Consequently, cooperative bank has achieved its differentiation by drawing a generic identity on the philosophy of the cooperative movement, in order to place itself within a separate position in the banking industry (Wilkinson and Balmer, 1996); cooperative identity becomes a social accepted brand when sometimes banks find their future in examining their past.

7. Cooperative Bank of Chania: A Case study for Managerial Network Representations

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27 It is a definition of gain as defined by "The Ohio Cooperative Development Center" at http://ocdc.osu.edu/ (accessed on March 2008).

Cooperative banking sector was a late but well- adopted institutional innovation followed the second stream of deregulation of the market in the banking sector (Gortsos, 1998). Currently, sixteen cooperatives banks operate in Greece with a total network of 181 branches covering the major part of the country[28]. Bank of Greece has granted approval for two of these banks (Pancretan and Chania Bank) to operate country-wide, while another four have reached the cooperative capital required to allow them to expand their operations in the neighboring regions as well. The island of Crete consists of four prefectures and is the base of the two largest cooperative banks in Greece with a cumulative network of 84 branches allover the island. The capital of Crete is Heraklion, the base and headquarters of Pancretan Bank and another historical main city is Chania, as was the residence of three elected Prime Ministers (in the past 70 years), the base of several public and military authorities and the birthplace of Bank of Chania.

CBC is a bank founded with humility by the people and governed by them and their directly elected executives; operates for their greater good as a whole, consisting of pre-existing ties of homophily that transmute to homopolar bonds among members of the community of Chania. Three are the primary attributes of social entrepreneurship that boost stability and growth for CBC:
(1) deep knowledge of local environment, people, and their relations
(2) hands-on engagement with the economic and social life for employees and customers; and
(3) referral trust and solidarity, crucial for self-employed individuals and small-medium size enterprises living in Crete.

At a community level as living in affinitive local societies, members of CBC transform their cultural values to ethical – originally meaning daily-expected – traits when they decide to register, pay the ticket-share and start doing business. This is an Aristotelian ideal that "we are what we repeatedly do"; ethos is a way of life diffused through the cooperative network fabric. The core value of Greek "*philotimo*" safeguards integrity and performance in Cretan society, as an enthymeme of a social added-value. Greekness as identity[29], manifested in Crete with philotimo, enriches transactional ethos with a social dimension that makes CBC ethical and a benefit dimension that makes it sustainable.

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28 The Association of Cooperative Banks of Greece (ESTE) reports 181 branches for the group of cooperative banks, in the first half of 2009 (available at http://www.este.gr/en/index.html, accessed on October 2009)

29 Managerial and behavioral aspects of philotimo are explained in: Bourantas D. and Papadakis V. (1996), Greek Management, International Studies of Management and Organization, Vol. 26, Issue 3, pp: 13-32. Skiftou V. (2005), Within Social and Cultural Practices of Greek Society Subjects Negotiate a Series of Issues that are Related to Family and the Complexities of It, LSE Doctoral Conference. Vassiliou V. G. & Vassiliou G. (1973), The Implicative Meaning of the Greek Concept of Philotimo, Journal of Cross-Cultural Psychology, Vol 4, No 3.

Bank of Chania operates[30] using the organization chart shown in Figure 4 (Marakakis et al, 2007). A representation of an almost 2-layer chart undermines managerial functions but underlines the need for roles of power that report to their own *philotimo*. In the case of credit unions statutory chart has clear-cut levels (Melvin et al, 1981; p.15).

The application of social network analysis using UCINET[31] representation and principles described in Scott (2007) generates two characteristic diagrams:
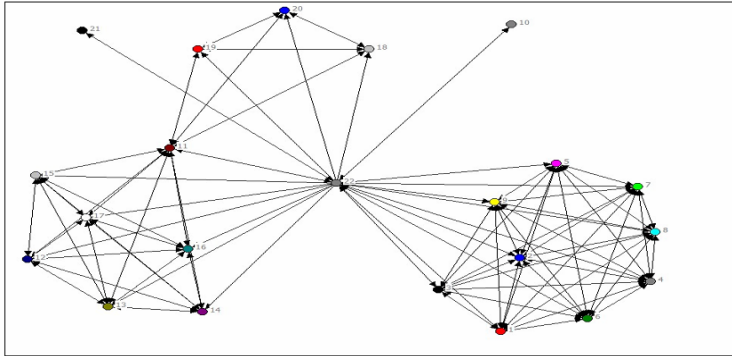
Figure 5: Dependency Matrix
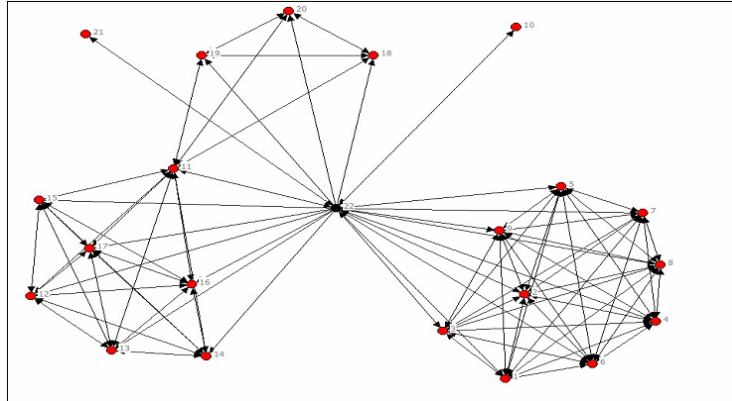
Figure 6: The ego network of Branch 22

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30 Since 2008 a new organizational chart is in progress with the establishment of 6 directorates that report to the CEO. Also, more branches have been added to the network. In the current analysis data correspond to the organizational structure of 2007.

31 UCINET software by Hanneman & Riddle (2003) is one of the standard tools used by The International Network of Social Network Analysis.

Geographical distribution denotes centralization. Members of CBC value the feeling of belonging to become stable and work without taking significant risks. Their *philotimo* is exercised with safety. In the case of credit unions most branches would be like No 10 and 21. The network of branches consists of three main neighborhoods (Chania, Heraklion and Lasithi) when the Main branch in Bank Headquarters and is the central branch per se. Branch No11 is operating with the role of semi-central for Heraklion and Lasithi prefectures. Reflective ties denote the intra-branch network (users are smoothly interconnected with in the branch) that is important but are being left out to make a clear view of the whole network interaction.

Branch No 22 is the Main Branch and Bank Headquarters. The main branch is the only branch with direct managerial connection (all directors and supervisors of the central branch have the managerial privilege of "asking for report", of reference for information and documentation, of cooperation with the branch manager and for acquiring information on transactions and auditing trail.

(0) GENERAL ASSEMBLY (21, 000 members)

(1) BOARD OF DIRECTORS

(2) CHAIRMAN & CEO

(3) Vice Chairman

EXTERNAL CERTIFIED AUDITORS
• BALANCE SHEET
• INTERNAL AUDIT SYSTEM
(Basel Compliant)

Subsidiaries (Cretan Estates SA, Chania Insurance Ltd)

(16) CEO's X- SECRETARY

LEGAL ADVISORY SERVICE

Assets Liability Committee (ALCO)

-(18)AUDIT COMMITTEE
INTERNAL AUDIT SYSTEM
✓(19)AUDIT UNIT
✓(20)RISK UNIT
✓(21)COMPLIANCE UNIT

(5) CHIEF INFORMATION AUDITOR (external contractor)

TECHNICAL ADVISORY SERVICE

1st Grade Loan Committee
2nd Grade Loan Committee

(4) OPERATION & DEVELOPMENT MANAGER & Personnel Recruiting

(17) BANK & BOARD SECRETARY

SPECIAL TASK GROUPS

-Bank Security Committee
-Basel Compliance Committee

(22) Human Resources Dept

(18) INTERNAL ... Document Management

(5) Director of DIRECTORATE of Credit Supervision

(6) Main Branch Manager Supervisor

(7) Director of DIRECTORATE of Western Crete

(8) Director of DIRECTORATE of Eastern Crete Network

Supporting Services

Credit Collection Dept (Delays)

(12) Director of Credit Facility

Prefecture of Chania:
Managers of
1. Kissamou Street
2. Platanias
3. Georgoupoli
4. Platanos
5. Palaiochora

(10) CFO Accounting Finance & Liquidity Management

Product Development

(14) Manager of Investment-Stock Exchange & Custodian Services

Corporate Credit Dept

SMEs Credit Dept

Cheque Clearance Office

Commercial Exchange

Branch Manager

Insurance Services

Retail Banking

(13) Director of Customer/Member Relations Sub-Directorate

Prefecture of Rethimnon
1. Rethimnon Branch Manager

9. Souda

Prefecture of Lasithi
Managers of
1. Agios Nikolaos
2. Sitia
3. Ierapetra

(11) CIO Information - Data Processing & Recovery Coordination Center

Mortgages Dept

Consumer Loans & Cards

Loan Operational Platform Dept

Alternative Networks & ATMs

6. Moires

Independent Credit Officers

Central Cashier

(9) Athens Branch Manager (Metropolitan Branch in Capital City)

TELLERS

Figure 4: Organization Chart 2006, Adjusted in English

8. Concluding Remarks/ Implications

The Greek Commercial Banking System is generally considered as social responsible in the past decade (Arapoglou in HBA report, 2008; p. 51). Competition and complementary character of cooperative banks seems to play a decisive role in a bottom-up approach of enriching banking operation with ethical principles. In several cases Greek customers ask for philotimo that supersedes guarantees, tangible collateral, and contractual agreements. Further research is needed for a detailed representation of formal hierarchical ties that exist in Bank's organization chart and a comparison with all the overlapping lines of connection. Additional analysis of the dimensions of philotimo and their compatibility with cooperative principles may reveal structural connections that connect social relationships with doing cooperative business. Other network related questions in the intersection of managerial attributes with *philotimo* traits are:

- *"who you choose to share important information",*
- *"who you communicate with to get the job done",*
- *"whose secretary is critical for 'important matters",*
- *"who is the most likable and*
- who the most non-approachable and who the most redundant director",*
- *"who is the non executive that you ask the most",*
- *"who is the executive most likely to be elected in your preference"* etc.

These questions are important for an intra-level examination but can also be generalized to study the game of influence and power and managerial efficiency in the specific bank of in the sector. In the end people have the right to choose as banking competition is unrestricted (in Greece) but when they choose they have to interpret their understanding in the following value component: "utility value, affirmation value, ego-support value, stimulation value and security value". The network setting is responsible of holding local communities tight together, when the concepts of "value", "success", and *philotimo* are among criteria of action for individuals. Thus, a complete social network approach has to determine what members think of their co-operative, how do they value its performance and in which ways they understand that it meets their needs. In the end, such an approach has to assess how central a cooperative bank is in their strategic approach for self-sufficiency and sustainability in local communities. In the case of Greece it is important to move aside several historical incidents in the Greek rural context, due to which cooperation was reshaped as a web of social values, several times in the first three-quarters of the 20th century. Also, a comparative review of the parameters of trust – with personality constraints, cultural expectations, learned attitudes, and decision mechanisms - and philotimo as an interaction factor that may lead to the probability that "A will connect with B" could reveal intersections and overlaps useful to analyze the cooperative phenomenon. In Greek cooperative banks, "doing business" is another face of the social networking coin; social bonds and ties supersede commodified transactions.

CBC encapsulates a back to basics approach that dictates the motto "teach your company to feel small again (as when it started)"; a notion that gains acceptance from the community and inspires personnel. That is what makes people pay attention to detail, work around the clock, stay involved when they are not in office, and put an effort that is worthwhile for their community. In the past month there is a tendency from several banks to return to their "economization"[32] that fueled the crisis. Frugality is an attribute of self-sufficiency especially when people are connected with homopolar bonds of responsible sourcing and distribution of funds. In CBC doing business is another facet of the social networking coin; a Main Street bank that gives customers a word in how their money is managed – most importantly, by encouraging their input into the ongoing development of bank's ethical policy. If man is an economic animal in Aristotle then he becomes connected and networked in CBC.

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Influence of Relationships to Outcome of Innovation: Theoretical Framework Building

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Purpose: The aim of this paper is to provide theoretical framework on relationships amongst a network of companies and other entities and their influence to outcome of innovation performance in corporate environments.Understanding the influence of these relationships to innovation performance is significant to researchers interested in subjects of corporate performance and business strategy. Innovation performance in corporations is influencing organization's capacity to generate a strategic competitive advantage (Goyal and Pitt, 2007; Mrinalini and Nath, 2008), increase market share and enhance financial performance (Leiponen, 2000; Fallah and Lechler, 2008).

Research Methodology/Approach: The research for this paper has been completed through building a theoretical framework based on the existing academic research on innovation management, observed from the relationships perspective amongst a network of companies, and other entities, and influence of those relationships to innovation outcome.

Findings: Innovation performance, its quality and novelty depend on organization's collaboration with a network of other companies, organization's position within the supply chain and an industry eco system. Novelty of innovation can be divided in three major categories – innovation novel for the company only, innovation novel for industry\region, or a globally novel innovation. Innovation can also be classified as technology or business model based in reference to the level of risk and size of investment needed to develop it. In some cases innovation performance is enhanced through networked innovation – collaboration between several companies innovating jointly, rather than being only a passive participant in the supply chain. Authors believe that theoretical concepts for observing components of innovation system on a single company can be applied to a network of companies as well as they could be observed as an extended organization. Organizational network size, peer density and strength amongst peer ties can

influence the performance of innovation. Organizational structure\type can also influence innovation performance whereas only hybrid mechanistic-organic organizational types are the most successful in producing both high productivity output and high creative innovation value. Ownership of an organization can also influence innovation performance. Measurement of innovation performance according to the latest research is measurement of metrics of organizational inputs and outputs produced (inputs – resources required to produce innovation vs. revenue generated and number of patents produced).

Originality/value: Value of the paper is primarily to academics interested in researching subjects of innovation management, corporate performance and business strategy. Identified gaps in the academic literature provide originality in exploring a number of directions as further research opportunities.

Keywords: Innovation, management, performance, relationships, network

1. Introduction

Globalization inevitably brings a new game to town – a very dynamic and a fluid environment, highly competitive and challenging to many businesses with the only one thing being constant – the uncertainty. In order to compete and stay ahead of the game businesses need to evolve to dynamic and flexible organizations with agility to swiftly adapt to new environments, serve constantly changing needs of clients and cope with the ever increasing global competition. Innovation is one of the major catalysts of the modern knowledge base economy. In order to venture globally and sustain a global competitive advantage, companies must continuously and systematically innovate.

1.1 What is innovation

There are many definitions of innovation – the first definition starts in 1930 with Joseph Schumpeter's[33] view that innovation has to be practical and commercial implementation of a discovery (Letenyei, 2001). More recent definitions of innovation – such as the one from Narvekar and Jain (2006) state that:

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[33] The first notion of practical implementation of innovation in organizations in literature is attributed to Joseph Schumpeter who introduced the Theory of Economic Development in 1930's – competing with Keynesian theory of economic development at the time (Flynn, 2008).

> *Innovation is the process of taking an original idea and converting it into measurable business value to an organization.*

Lloyd (2006) defines innovation simply as *change that adds value.* Goswami and Mathew (2005) have revisited the definition of innovation and argue that innovation has to bring a change that is perceived to be positive – as innovation can also produce a negative outcome. In support, Ozgen and Olcer (2007) argue that innovation has to successfully introduce a new process in organizations or a product into the marketplace - therefore discovery has to be converted to innovation producing positively perceived outcome.

1.2 Kinds of Innovation

Number of authors (Flynn, 2008; Laukkanen *et al.*, 2008) agrees that main types of innovations can be classified only if there are different development trajectories present – as such arguing that innovations that can be found in organizations should be classified as incremental or radical. Incremental innovation is denoted as a process that frequently introduces smaller innovation outputs on regular basis whereas radical innovation (also known as breakthrough or disruptive innovation) is denoted as a process that introduces radical (major) innovations – usually within a longer time periods between innovations (also known as accumulation or build-up period – needed for a major innovation to occur).

Goswami and Mathew (2005) conclude that innovation is something different to each organization it is introduced to – its definition is dependent on how each organization perceives the innovation. Similarly, Rivas and Gobeli (2005) believe that innovation is perceived by each company individually and they go a step further suggesting classification and evaluation of innovation in terms of three levels of novelty – the innovation should be observed as:

- Novel only to an organization
- Novel to the industry \ region
- Novel on the global level

Dervitsiotis (2010) goes further to classify innovation types to technology-based and business-model innovations in reference to the level of risk and size of investment needed to produce either radical or incremental innovation. Author argues that technology based innovations are related to product, process and facilitating technologies (i.e. infrastructure) and business-model innovations are related to the value proposition, supply chain and target customers (as per the figure 1).

It is interesting to note that researchers (Flynn, 2008; Goswami and Mathew 2005) note that innovation does not necessarily need to be a brand new process or a product – it could also be an adaptation of something that has already been successful – turning it around in a completely new way.

1.3 Innovation Management

According to researchers (Fallah and Lechler, 2008; Mrinalini and Nath, 2008; Goyal and Pitt, 2007; Stalk, 2006) innovation management represents a conscienes design and implementation of an innovation system and its management in organizations with the main components of such design attributed to factors fostering the innovation environment in organizations – such are innovative culture, idea generation, development and commercial exploitation of innovations. The final outcome from implementing and managing such system in organizations translates to new business opportunities, increased competitive advantage and improvement of organizational performance
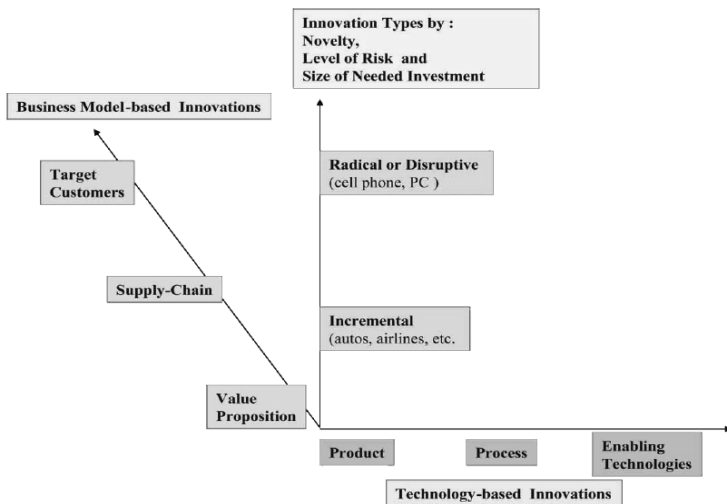
Figure 1: Dervitsioti (2010)

1.4 Innovation: Strategic to Competitive Advantage

Large number of researchers (Goyal and Pitt, 2007; Fallah and Lechler, 2008; Mrinalini and Nath, 2008) believe that innovation is a crucial quality organizations should embrace if they are to remain competitive for prolonged periods of time in highly dynamic global markets. Goyal and Pitt (2007) provide a view that non-innovative companies cannot sustain the competitive

force of the global environment. Mrinalini and Nath (2008) argue on the importance of increasing competiveness in the knowledge-based economy through innovation. Several studies (Geroski, 1993; Leiponen, 2000) show that companies who innovate have larger market shares and are more profitable than compared to non-innovators. Fallah and Lechler (2008) in their longitudinal study on performance of large multinationals with global innovation capacities have found a positive causal relationship between innovation and company performance. It is important to note that Flynn (2008) argues that innovation can create completely new markets or transform the existing markets in a radical way producing new customer behaviours.

2. Components of innovation system

Number of researchers (O'Connor and DeMartino, 2006; Hansen and Birkinshaw, 2007; Dervitsioti, 2010) all agree that the basic components of innovation system (either observed for a single organization, or a group of networked organizations) can be summarized with the several main links within the innovation value chain:

1) Idea generation (discovery, creation, capture)
2) Conversion (project selection)
3) Project development (of innovative products and services)
4) Diffusion (of innovative products and services in the marketplace)

All authors argue that there is a value adding transformation between each component of the innovation system – representing the innovation value chain (with each stage adding an innovative value within the system).
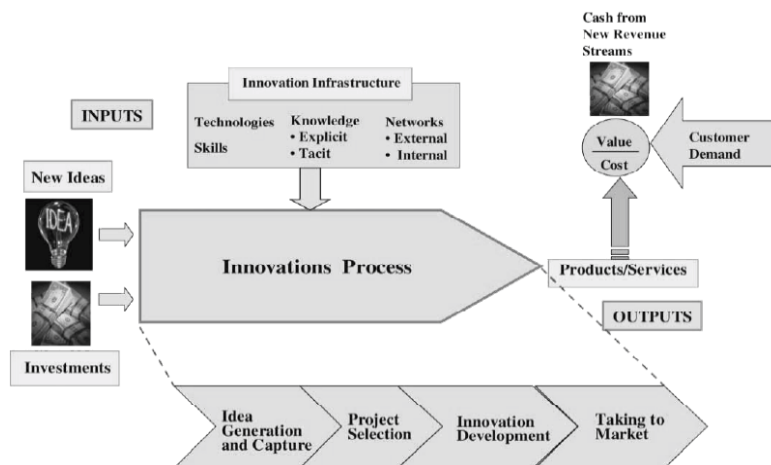
Figure 2: Dervitsioti (2010)

Dervitsioti (2010) in addition introduces value\cost and customer demand into the relationship describing the end commercialization of innovative products and services (as an output) in relationship to the investment and resources required (as an input of the system).

3. Networked Innovation

Increasing number of authors (Andersen and Drejer, 2008; Pisano and Verganti, 2008) agrees that practicing networked innovation seems to be one of the most successful ways to innovate in the global economy. Networked innovation denotes not a single, but a group of companies working together on innovative new products and services, sharing each other's resources – hence providing the competitive advantage as several companies can allocate much larger resources than a single company, however also sharing risks and rewards.

Andersen and Drejer (2008) in their research argue that the concept behind networked innovation relies on the same principles as with a single company – idea generation, recombination and reuse towards selection and development of innovative projects is practiced within a group of companies (also observed as extended or distributed organization) – however as several companies can provide much larger resources than a single one – innovation capacities of the group as a whole are greatly larger – as advocated by researchers.

3.1 Relationships amongst organizations: influence to innovation

Reserachers (Voelpel *et al.*, 2005; Moore, 1993) attempt to utilize concepts from the nature – such are evolution, memory transfer, ecosystems and survival of the fittest in order to develop theories on innovation management. As such, Voelpel *et al.* (2005) – attempts mapping the innovation process as an evolutionary process in biology (attempt to model innovation per nature's design), stating that the concept can exist outside of an organization and it is dependent on the overall ecosystem – networked innovation viewed from the nature's point of view. Authors in their research believe the most important element in fostering innovation in organizations is to nurture the corporate innovation culture through development, passing and accumulation of cultural information within an organization and amongst its network (partners, supply chain, stakeholders). Researchers introduce a concept of "innovation meme" (concept of memetics – passing of cultural information – in genetics and biology) – defined in the context of innovation management as unit of measurement used to transmit cultural information fostering

innovation (and its limitations). The research is important contribution to academic literature as the researchers devise "Organizational Fitness Profiling (OFP)" framework based on innovation shaping, creation and tracking that managers can use to evaluate the level of innovation culture within their organizations and networks.

In addition, Moore (1993) uses analogy with biological ecosystems arguing that the competition in the marketplace is truly between ecosystems, rather than individual companies. As such, author suggests that managers should observe their company's existence in such ecosystem (consisting of suppliers, partners, customers, competitors) and consider if they are networked amongst the fittest in order to thrive as well as to survive. This point of view is important supplement to networked innovation as it implies that in order to innovate within a network of organizations it is important for an organization to have the best possible peers within the ecosystem. Author also argues that the survival of the ecosystem strongly depends on continuous innovation and reinvention – maintaining the core value of the ecosystems that is appealing to buyers (also supported by Dervitsioti, 2010). The study also implies that the most successful companies create new ecosystems - spin offs of new innovation - from the existing system.

Oviatt and McDougall (2005) attempt to define forces influencing the speed of organizational venturing – the study suggests a theoretical framework whose main regulation component is the network of relationships amongst companies in terms of tie strength, network size and also density of the networks (number of peer organization within the network). Authors argue that as the network size, number of peers and strength of its ties (links) is stronger, the organizational venturing therefore has a stronger performance.
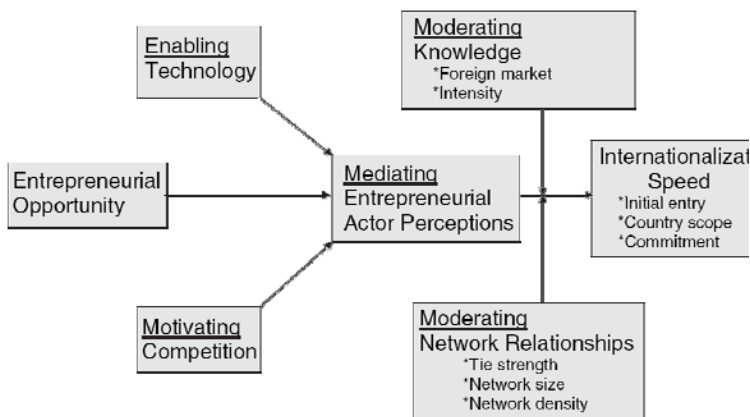
Figure 3: Oviatt and McDougall (2005)

3.2 Organizational Structures: influence to innovation

Tidd and Hull (2006) in their research on organizational structure and its influence to innovation argue that the organic organizational structure seems to be the most suitable for innovative environments whereas mechanistic organizational structure seems to be the most suitable for environments with predictive outputs (such as manufacturing). On the other hand, Duobiene and Pundziene (2007) in their research have found out that organizational structure in innovative companies should not be completely flat. In addition, O'Connor and DeMartino (2006) suggest that organizational structure should incorporate research and development activities in a completely separate department – or a company (e.g. within the organization network) - in order to foster the innovation, especially pertaining to radical innovation activities. Both Duobiene and Pundziene (2007) and O'Connor and DeMartino (2006) find that organizational structure must support effective communication in order to foster innovation. Johnson (1990) argues that matrix organizational structure enhances team communication and flexibility in utilization of human resources (by introducing various professional experiences to projects not typically available with permanent teams) – which is similar to a group of network companies each attributing with various professional experiences. On the other hand, Panne *et al.* (2003) argues that little is known on the influence of Matrix organizational structure to innovation.

It is interesting to note that Cantista and Tylecote (2008) have found a relationship between the company ownership (shareholders) and management and their influence to innovation activities. Researchers argue that if the shareholder-management relationship is distant – such is the case in most public companies – the innovation performance will be degraded unlike companies who have a strong relationship between shareholders and management.

3.3 Duality View of Innovation

Mangnusson and Martini (2008) in their research on continuous innovation point out that academic literature treats operational and innovation performance with duality – the academic literature suggests that companies can either have high operational performance (productivity) or innovation performance (creativity), but not both at the same time (treating them as mutually exclusive) – hence described as the duality view of innovation. However, Mangnusson and Martini (2008) point out there are companies simultaneously successful in both operational and innovation performance – having simultaneously both high productivity and creativity – arguing there is a discrepancy between academic literature and the practice.

Such view could be substantiated through research by Tidd and Hull (2006) who have looked into multi-dimensional factors influencing innovation management in service sector, finding out that the type of organization directly influences its innovation performance. The research has identified four organizational types, among which a "hybrid mechanistic-organic" type of organization encapsulates dual performance factors – it is simultaneously performing well in cost reduction (operation efficiency) and innovation performance. The other three organizational types found in the research are mutually exclusive in performance efficiency in operations, innovation, or customer service – viewed as a single component.

Further to the above, Nystrom *et al.* (1998) argues that the literature on successful innovation management is paradoxical as at the same time literature calls for open (unrestrained), and yet closed (restrained) operating modes in fostering innovation. Author points out the following paradoxical pairs found in the literature on innovation management:

- managers should be flexible - yet focused;
- market oriented - yet technologically oriented;
- open minded - yet focused

Author believes that the successful innovation lies in the proper balance between these paradoxical (open and closed) operating modes. In addition, author also argues that due to paradoxes in open and closed operating modes in the literature there can be no clear distinction between incremental and radical innovation – rather they should be viewed as complimentary one to another.

4. Innovation Performance Measurement

Researchers (Kianto, 2008; Paulson *et al.*, 2007; Rivas and Gobeli, 2005; Dervitsiotis 2010) stress out the importance of measuring innovation performance throughout development of innovation as an imperative in properly managing potential financial gains from such innovation. Paulson *et al.* (2007) stress out that especially in the cases of long innovation cycles (such as radical innovation) there are risks of uncertainty if such development can't be financially leveraged in the marketplace and authors suggest continuous innovation performance measurement in innovation management process. On the other hand Kianto (2008) warns there is a lack of reliable methodologies for measuring innovation performance in companies.

Adams *et al.* (2006) introduces "*Synthesized Framework of the Innovation Management Process*" – a framework used for measuring performance of innovation activities in organizations. It is interesting to note that the study

was based on longitudinal research of six previous innovation management research studies (1995-2002). Authors have empirically concluded there are seven common categories companies need to measure in order to understand the innovation performance in their organizations – outlined with the following table:

Synthesized Framework of the IM Process (measuring innovation performance)

Framework category	Measurement factors
1. Inputs management	People, physical and financial resources, tools
2. Knowledge management	Idea generation, knowledge repository, information flows
3. Innovation strategy and leadership	Strategic orientation, strategic leadership
4. Organizational culture and structure	Culture, structure
5. Portfolio management	Risk vs. return balance, optimization tools
6. Project management	Project efficiency, tools, communication, collaboration
7. Commercialization	Market research, market testing, marketing and sales

Figure 4: Adams *et al.* (2006)

The previous views at innovation performance measurement observe them internally from within an organization, however it is interesting to note that the latest research studies suggest that innovation performance measurement metrics should be viewed outside of the organization, measuring only inputs (resources) vs. outputs gained. Dervitsiotis (2010) suggests that innovation performance metrics should include input resources required (human resources, investment and other) and output – the number of new products, number of patents, revenue achieved. Author suggests the following metrics – as an external observation of innovation performance measurement:

- *Speed to market (effectiveness of innovation value chain);*
- *Revenue captured versus revenue achieved from innovations;*
- *Percentage of current revenue from innovations of the last two to three years;*
- *Level of innovation project risk;*
- *Risk versus return ratios;*
- *Knowledge gained and retained*

Therefore the innovation performance can be, according to the literature, measured both internally and externally. It can be argued that perhaps more suitable in observing a single organization is internal view at measuring innovation performance, whereas in observing innovation performance of a

group of networked companies the external view measuring inputs vs. outputs produced is perhaps more suitable.

5. Conclusion

Innovation performance, its quality and novelty depend on organization's collaboration with a network of other companies, organization's position within the supply chain and an industry eco system. Novelty of innovation can be divided in three major categories – innovation novel for the company only, innovation novel for industry\region, or a globally novel innovation. Innovation can also be classified as technology or business model based in reference to the level of risk and size of investment needed to develop it. In some cases innovation performance is enhanced through networked innovation – collaboration between several companies innovating jointly, rather than being only a passive participant in the supply chain. Authors believe that theoretical concepts for observing components of innovation system on a single company can be applied to a network of companies as well as they could be observed as an extended organization. Organizational network size, peer density and strength amongst peer ties can influence the performance of innovation. Organizational structure\type can also influence innovation performance whereas only hybrid mechanistic-organic organizational types are the most successful in producing both high productivity output and high creative innovation value. Ownership of an organization can also influence innovation performance. Measurement of innovation performance according to the latest research is measurement of metrics of organizational inputs and outputs produced (inputs – resources required to produce innovation vs. revenue generated and number of patents produced).

6. Further Research Opportunities

Existing research does not provide explanation of the influence of the type of relationship amongst a network of companies and its effect to performance or the novelty of innovation – presenting further research opportunities. Types of organizational structures and organizational relationships could be perhaps observed in relationship with sampling the outcome of innovation performance – as observed externally - and innovation novelty measurement in order to determine the influence of the type of organizational relationships to performance and novelty of innovation.

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The Quality of Regional Programme Documents from the point of view of the Link between their Main Parts

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Tourism promotion is one of the spheres to which the regional policy pays a great attention. The development of tourism has become the object of the regional planning. The results of this process are programme documents which can be understood as a tool of the implementation of the regional policy. The quality of these documents plays the key role here. This paper focuses on one of the important requirements on the quality of these documents. That is a strong link between their two main parts – the analytical and the proposed part. The aim of this paper is to make a draft of a methodological procedure which could be used for the evaluation of the mutual agreement between the results of both parts and to verify it in practice.

Keywords: regional development, tourism, programme documents, quality, internal links

1. Introduction

This paper deals with an issue of cohesion between the analytical and the proposed part of regional programme documents which are focused on tourism development. This set of problems is an integral part of the grant project called "The draft of a system for evaluation of the regional programme documents in tourism", which is solved at the Faculty of Management of the University of Economics, Prague. The aim of the research is to draft a complex procedure which should enable the local governments to objectively evaluate quality of the used programme documents and which should simultaneously contribute to an enhancement of quality of the regional planning. Our paper presents a procedure for

evaluation of intensity of the link between the two main parts of the programme documents. This relatively complicated procedure is a part of the overall documents' quality evaluation process. There are also noted the results of its application on two selected documents.

In the sphere of tourism only the strong and systematically managed organizations can succeed in a globalization process which is in addition accompanied with a though competition. Worldwide trends, such as surplus of flight, hotel and bed capacities, appearance of new destinations on the market, new technologies, worldwide network of the information and reservation systems and also current economic crisis, grow the intenstiy of competition not only between specific tourist attractions but also between the cities, regions or whole states. The programme documents can significantly help the region to succeed in this contest. The quality of these documents has a great importance. Only such a document which is well elaborated can bring to a region a higher comparative advantage and thus ensure its long-term development.

2. The Programme Documents

An application of planning in a regional policy results from the current trend of the private and public management convergency. The term "planning" is difficult to precisely describe. In the most general level Hall (2002) defines planning as "the making of an orderly sequence of action that will lead to the achievement of a stated goal or goals" (p. 3). Regional planning can be considered as a specific planning subset which is focused on the process of managing and influencing the regional development. Successful implementation of the strategic planning in a private sector has started to influence the sphere of the regional planning (Poister, Streib, 1999). That is why we can talk about the regional strategic planning nowadays.

The output of the regional planning is the programme document which contains the results of the planning process. This process is composed of several basic steps and sometimes it is called the planning cycle (e. g. Bryson, 2004). Many authors (e. g. Boyd, Reuning-Elliott, 1998; Allison, Kaye, 2005) agree that delimitation of the basic premises, realisation of the external and internal analysis, synthesis of ascertained facts into the SWOT analysis, definition of development vision and strategic goals, selection of a proper strategy and its implementation belong to the main steps of the planning cycle. The typical structure of the programme documents results from the process described above.

Information of the highest possible quality is absolutely essential for a formation and subsequent implementation of the strategy. The analytical part of the documents deals with their summarization, analysis and interpretation. Its main objective is to identify, analyse and assess the key factors of external and internal environment which have a potential to influence the final selection of the strategic goals and tools needed to their achievement. The results of the strategic analysis represent a starting point for identification of

the competitive advantage sources. Suitable tool for their summarization is the SWOT analysis method (Allison, Kaye, 2005; Grant, 2008). Its function is to create the relevant information base for definiton of a vision, region's main objectives and consequential strategy.

The proposed part of the documents is closely connected with the analytical part. It contains a long-term vision of the region's development, main strategic objectives and concrete measures for their achievement. The strategic objectives characterize the future phases which must be achieved for a fulfillment of the development vision. The concrete tools for achievement of the strategic objectives - and thereby for a realization of the whole strategy - are the individual measures.

3. The Quality from the Point of view of the Internal Link

The programme documents should be considered as a specific product of regional planning. It should be possible to measure their quality as in the case of any other product. The ČSN EN ISO 9000:2001 norm defines the quality as "a level of fulfillment of the requirements by the set of inherent marks" (p. 2). One of the typical marks of the programme documents is their structuring into several parts. The analytical and proposed parts play the most important role. Many authors (e. g. Vanhove, 1999; Bryson, 2004) refer to the importance of their mutual cohesion (internal link), i. e. a correspondence between the results of the strategic analysis and the drafted strategy – the priority areas and measures. The concrete measures should clearly react to the results of the performed analyses. This is the only way how the measures can be considered to be legitimate, conceptual and measurable (Luštický *et al*, 2010).

That is why the level of cohesion – the intensity of the link – between the analytical and proposed parts of the programme documents can be considered as an important part of overall quality of these documents. An evaluation of the intensity of the link is relatively difficult. It is not possible to carry out the evaluation process without a subjective approach to the evaluation and when doing so, it is necessary to take into account a lot of influencing factors.

4. Procedure of the Evaluation Process

The drafted procedure results from a currently prefered resource-based concept of strategic planning. In this concept the competitive advantage rises especially from the influenceable internal characteristics, i. e. from the unique resources and the ways of their utilization (Johnson, Scholes, 2002). These characteristics must be conformable with the conditions of an external environment which are mapped by the external analysis. The SWOT analysis

categorizes the external conditions into two categories – the opportunities and the threats. The internal analysis identifies the key internal conditions and examines their correspondence with the environment and their ability to create the competitive advantage (Grant, 2008). The SWOT analysis classifies them into the strong and weak points. The evaluation process is focused on the level by which the concrete meauses reflect the facts detected in the internal analysis. These are described in the strong and weak points of the SWOT analysis.

The evaluation of the links is carried out in this direction: component of the SWOT analysis → measures. This procedure evaluates how intensively the individual components of the SWOT analysis are reflected by drafted measures. The term component of the SWOT analysis is to be understood as one particular weak or strong point. The term part of the SWOT analysis expresses a summary of particularly oriented components, which means all strong or weak points. The evaluation is carried out for each component and thus for the whole part of the SWOT analysis. The evaluation of the link between the part of the SWOT analysis and measures is important from the point of view of the interpretation of the results.

Due to limited extent of this paper the following text includes only a general description of the evaluation process which is composed of the four main steps.

The first step takes into account a formal difference of the used SWOT analyses. If the SWOT analysis is to fulfil its information role and if it is to be comparable and evaluable at the same time, it should fulfill the basic formal requirements. These requirements are expressed by the punctual evaluation (0 – 2 points) of the four criteria. They were assigned weights which differentiate their importance:
- Introduction of the elaboration methodology (30%)
- Cogency, punctuality of formulations (15%)
- Determination of the importance of the analysis' individual components (20%)
- Introducing the conclusions of the SWOT analysis (35%)

The outcome of the first step is the weight co-efficient which compensates a dissimilar level of the assessed analyses and it is defined by the following formula:

$$W1 = \sum VC_i \times WC_i \quad (1)$$

W1	the first weight co-efficient
VC_i	value of the criterion
WC_i	weight of the criterion

The second step of the procedure compensates the different ways of elaboration of the SWOT analyses, or better to say the different informative bases from which the analyses resulted. The quintessence of this step is to

enable a comparison of differently constructed SWOT analyses and – at the same time – to take into account the importance of the links between the external and internal analyses and the SWOT analysis for the overall intensity of the internal links in a document. The principle of evaluation is identical to the first step. It results from the punctual evaluation (0 – 2 points) of the fulfilment of pre-defined criteria and from defined weigts of their importance:

- The document contains an analysis of the branch (20%)
- The document contains an analysis of the competition (20%)
- The document contains an analysis of the internal sources (30%)
- The document specifies the form of a synthesis of the analyses' results (30%)

The output is represented by the second weight co-efficient which is given by this formula:

$$W2 = \sum VC_i \times WC_i \quad (2)$$

W2   the second weight co-efficient
VC_i value of the criterion
WC_i weight of the criterion

The third step represents the evaluation of the intensity of the links itself. It is based on the modification of the method entitled the Distributively delegative awarding points which is based on the principle of the Delphi method and stipulates the weight of the votes of the individual evaluators. The evaluation uses the "L" form matrix chart for appreciation of the mutual link between the components of the SWOT analysis and the measures. Its quintessence is the look on the measure as a tool for reaching the strategic aims which should react to the individual component of the SWOT analysis in appropriate way. The level of reaction is expressed by means of the Likert Scale:

- very strong link: 1 point
- strong link: 0,75 point
- weak link: 0,5 point
- very weak link: 0,25 point
- no link: 0 point

The evaluation of the link between measures and the whole part of the SWOT analysis is carried out by the following formula:

$$PEIL_i = \frac{\sum \dfrac{\sum ECA_i}{\sum M}}{\sum CO_i} \quad (3)$$

PEIL$_i$ points evaluation of the intensity of the link of the individual part of the analysis

ECA$_i$ evaluation of the individual component of the analysis

M   measures in the proposed part of the document

CO$_i$ components of the individual part of the analysis

The evaluation process consists of the following three steps:

- Distributive phase – evaluators examine the link between each component of the SWOT analysis and a particular measure, and they put the result into a prepared table (see Table 1); they set the punctual evaluation of the intensity of the link between part of the SWOT analyis and the measures on the basis of formula stipulated beforehand
- Delegative phase – evaluators can delegate a relative weight of their votes to other evaluators according to the prepared table (see Table 2)
- Synthetic phase – in this stage new relative weights of votes of all evaluators are stipulated as a difference between the received and delegated numbers of points (see Table 3)

Table 1: The Distributive Phase

Components of the SWOT analysis	Measures in the proposed part						PEIL
	M 1.1	M 1.x	M 2.1	M 2.x	M X.x	...	
S	0 – 1	0 – 1	...	...	...	...	
...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	
W	...	...	...	...	...	...	
...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	

Source: our own draft

Table 2: The Delegative Phase

Evaluators	The number of delegated points to the other evaluators			
	ER1	ER2	ER3	...
E1	X			
E2		X		
E3			X	
...				X

Source: our own draft

Table 3: The Synthetic Phase

Evaluators	The number of delegated points to the other evaluators				Received points	Delegated points	Resultant weight
	ER1	ER2	ER3	...			
E1	X				∑ ER1	∑ E1	(100 + ∑ ER1 - ∑ E1) / 100
E2		X			∑ ER2	∑ E2	(100 + ∑ ER2 - ∑ E2) / 100
E3			X		∑ ER3	∑ E3	(100 + ∑ ER3 - ∑ E3) / 100
...				X	∑ ...	∑ ...	...
Check-up	∑ ER1	∑ ER2	∑ ER3	∑ ..	∑ RP	∑ DP	

Source: our own draft

The resultant partial evaluation of the closeness of internal links is a weighed arithmetic mean of the evaluations of all evaluations, given by the following formula:

$$PEL_i = \frac{\sum (PEE_i \times RWE_i)}{\sum E} \quad (4)$$

PELi   a partial evaluation of the links in a part of the SWOT analysis

PEEi   a partial evaluation of a particular evaluator

RWEi   a relative weight of an evaluator

E   evaluators

The final step of the evaluation process is the modification of the partial evaluation by two weight co-efficients stipulated beforehand. It is expressed by the following formula:

$$OEL_i = PEL_i \times W1 \times W2 \quad (5)$$

OEL$_i$ the overall evaluation of the links of a part of the SWOT
analysis
PEL$_i$ a partial evaluation of the links of a part of the SWOT
analysis
W1   the value of the first weight co-efficient
W2   the value of the second weight co-efficient

5. Evaluation of the Programme Documents

The programme documents of the South Bohemian Region (SBR) and the South Moravian Region (SMR) were selected to verify our drafted procedure in practice. These specific conception documents of medium-term character result from the findings of the general regional strategies. On the basis of analysis there are defined particular activities meant to achieve development objectives in the tourism promotion in these documents. Both regions have similar conditions for tourism development. However their programme documents were created in the course of five years. The South Bohemian document is the oldest valid document, the South Moravian document belongs among the newer ones.

The evaluation process was made by four evaluators (E1 – E4) – members of the research team – with the aim to verify a suitability of the method stipulated beforehand and refer to the differences in the case of considerably time-different documents. The first and second weight co-efficients – stipulated according to the level of fulfilment of the criteria mentioned above – are setted by the following way:

$$W1_{SBR} = 1 \times 0,30 + 0 \times 0,15 + 0 \times 0,20 + 2 \times 0,35 = 1,00 \quad (6)$$

$$W1_{SMR} = 0 \times 0,30 + 2 \times 0,15 + 0 \times 0,20 + 0 \times 0,35 = 0,30$$
(7)

$$W2_{SBR} = 1 \times 0,20 + 1 \times 0,20 + 1 \times 0,30 + 0 \times 0,30 = 0,70 \quad (8)$$

$$W2_{SMR} = 1 \times 0,20 + 0 \times 0,20 + 2 \times 0,30 + 0 \times 0,30 = 0,80$$
(9)

The punctual evaluation of the intensity of the link between individual part of the SWOT analysis and proposed measures, which is stipulated according to the formula number 3, is described in the following table.

Table 4: Punctual Evaluation of the Intensity of the Links

Compone nt of the SWOT	PEIL of the SBR				PEIL of the SMR			
	E1	E2	E3	E4	E1	E2	E3	E4

analysis								
S	0,124	0,073	0,286	0,308	0,188	0,163	0,282	0,276
W	0,089	0,091	0,152	0,333	0,215	0,295	0,198	0,345

Source: our own calculation

The next table summarizes the results of the synthetic phase according to delegation of the relative weights of evaluator's votes.

Table 5: Results of the Synthetic Phase

Evaluators	The number of delegated points to the other evaluators				Received points	Delegated points	Resultant weight
	ER1	ER2	ER3	ER4			
E1	X	20	10	10	40	40	100
E2	0	X	0	10	40	10	130
E3	0	0	X	0	40	0	140
E4	40	20	30	X	20	90	30

Source: our own calculation

The partial and overall evaluation for individual parts of the SWOT analysis – stipulated according to the formula number 4 and 5 – is described in the following table number 6.

Table 6: Partial and Overall Evaluation of the Intensity of the Links

Component of the SWOT analysis	The South Bohemian Region		The South Moravian Region	
	Partial evaluation	Overall evaluation	Partial evaluation	Overall evaluation
S	0,178	**0,125**	0,219	**0,153**
W	0,130	**0,031**	0,245	**0,059**

Source: our own calculation

6. Conclusion

The previous table indicates a very weak internal link between the crucial components of the analytical and proposed parts of the both programme documents. This situation is typical for the most of the strategic or programme documents on the regional level. As the selected sample indicates it does not tend to improve. The strategic objectives, priorities and

resulting measures are drafted in very general level with the aim to provide a sufficient room for manoeuvre for practically all decisions of the regional management. This fact is raised by the absence of any proven business method as a support of the strategic analysis and so it has become a mere description of the current situation in many times. Thus the resultant SWOT analysis is not able to identify the crucial facts influencing the long-term development which should become the basis for stipulating the priority spheres and subsequent measures of the region.

Our drafted procedure of the evaluation has the aim to contribute to an impovement of this state because identification of current weaknesses is the first step to their correction. Although its core is constructed with the help of subjective evaluation, the procedure is able to well describe the state-of-art of the documents and moreover it enables their mutual comparison. The procedure's logic takes into account a dissimilarity of performed analyses and SWOT analyses. It draws attention to the importance of fulfilment of at least minimal criteria. Presented procedure has certain weak points, and that is why it will be verified in a consequential research. Based on the results of its practical application, the team will work hard to eliminate or minimise these weak points. After that the internal link evaluation procedure will be integrated into the overall system of a quality evaluation of the regional programme documents in tourism.

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Scope for Implementing Web 2.0 Communications in RM Strategies by Financial Institutions: Opportunities for South-Eastern Europe

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Purpose: The aim of the research is to explore the scope for leveraging the dynamics of Web 2.0 communications in the domain of Relationship Marketing (RM) and to investigate the potential for the development and expansion of RM practice in the interactive online communication channels. The research aims to obtain theoretical and practical insights on the transferability and functionality of RM practices in Web 2.0 environment, with the focus on the financial services industry in the South-East European region (SEE). It is within the core interests of the research to explore the links between RM and Web 2.0 phenomena in the stated industry and to tackle the particularities of their practical implications in the region, under the premise of addressing the complexness of customer relations in the new era of communications, especially within the scope of the region of under-leveraged research efforts.

Research Methodology/Approach: Research is performed from the stance of inductive approach, seeking to explore and the current sate of phenomena exploiting qualitative methodology framework. Research: (1) explores the scope of Web 2.0 implementation in RM strategies through multiple comparative case studies of financial service institutions in SEE; (2) explores the customer perspective on Web 2.0 implementation in communication and relationship management with financial service institutions through customer focus groups; (3) introduces the method of "netnography" to the RM research in financial services domain by observing and describing the communication occurring in Web 2.0 channels, relevant to financial services, customer satisfaction, and online relations with financial institutions.

Findings: Research is currently in the early stage of conduct and at the beginning of the first stage of fieldwork. This paper presents preliminary insights from the first conducted interview as a part of the case study conduct

in the first phase of the research. The research will pursue further exploration of the phenomena of RM, Web 2.0 and bank marketing in SEE in order to obtain greater understanding of the underlying issues, drivers, impediments, and conditions for their development in present and the future.

Originality/value: Research aims to introduce novel perspective on the RM approach and implementation on several levels: (1) by exploring and describing the contemporary phenomenon of Web 2.0 and its transformational powers against the RM approach; (2) by focusing on the significance of Web 2.0 communications in RM in the relationship-sensitive industry of financial service; (3) by exploring the particularities of RM implementation and Web 2.0 communications in the under-researched yet progressively developing geographic region of SEE; (4) by implementing novel research method of netnography in combination with traditional qualitative methods of case studies and focus groups to address the dynamics of contemporary phenomenon of Web 2.0 communications.

Practical implications: Research aims to contribute to the formulation of innovative and practical RM approaches and strategies that leverage the power of interactive Web 2.0 communication. The strategies formed will be devised with the aim to be applicable to the requirements of financial service institutions in the SEE region as well as in broader geographic terms.

Keywords: Relationship Marketing (RM), Web 2.0, financial service institutions, South-Eastern European (SEE) Region, case study

1. Introduction

The first decade of the 21st century presented numerous challenges to businesses globally in the form of economic, political, social, technological, and environmental pressures. Faced with hardships of merciless industry rivalry and the uncertainties of modern capitalism, businesses nowadays struggle more than ever to sustain competitiveness in the markets, while not compromising customer-centeredness and integrity to publics. The renewed interest in the philosophy of Relationship Marketing (RM) emerges as a response to these accumulating pressures and reflects the paradigmatic shift in the quest for competitiveness through focusing on customer long-term value to the business. While the concept of RM has been extensively discussed in industrial markets in the past 30 years, it is interesting to investigate the possibilities for leveraging technology in the domain of services within the framework of this marketing doctrine, especially online communication technologies of the new century, such as the Web 2.0 or so-called "social media". A notable amount of research traditionally examined

the role of technology the implementation of RM theory in practice through studies focusing on automated policies and systems of Customer Relationship Management (CRM) and their role in managing relationships through marketing programs. However, there is little or no evidence of research examining the possibilities offered by modern online c such as Web 2.0 in establishing and maintaining relationships with customers through socially-open interactive communications. The research introduced in this paper aims to examine the relevance and importance of Web 2.0 communications in the implementation of RM strategies, with the focus on the interaction-sensitive industry of retail financial services and particularities of its implementation in the less researched region of South-East Europe (SEE). The research takes inductive approach to generating knowledge on the topic and engages in qualitative research, reflecting on its exploratory and descriptive interests. Research expects to arrive to the insights on the position of RM theory and practice in contemporary online environment of interactive Web 2.0 communications, to practical implications for implementing Web 2.0 technologies in RM strategies for the retail financial industry, and to insights on the opportunities and challenges of implementing qualitative research methodology in building knowledge in this branch of marketing.

2. The Principles of Relationship Marketing and Its Relevance for Financial Service Institutions

The concept of Relationship Marketing (RM) emerged in the academic literature in the early 1980s as paradigm-shifting idea in marketing and an alternative to the traditional "transactional" and "managerial" teachings in marketing discipline (Gronroos, 1994; Harker & Egan, 2006). The concept of RM introduced novel outlook on the role of marketing in academia and practice, proposing that marketing should not only aim at stimulating growth of consumption and sales by conquering new customer markets, but should pursue growth by creating and maintaining relationships with existing customers, building on their loyalty and strengthening their value to the business (Berry, 1983; Gummesson, 1987). With its origins from the business credo of industrial B2B firms, RM was introduced as a philosophy of developing and nurturing constructive and meaningful relationships between organizations and their networks (customers, suppliers, external and internal stakeholders) at a profit though value-enhancing initiatives that foster productive exchanges and create competitive advantages and competencies in the long-run (Berry, 2002; Gummesson, 2002; Sheth & Parvatiyar, 2000). While having customer-orientation as its founding stone, RM was built around the concepts of customer loyalty, customer trust, customer relationship proneness and relationship desirability (Berry, 1983). It was founded on the principle of essentially joint collaboration between suppliers and customers in developing and sustaining long-term commitment to each other, for the sake of enlarging mutual financial and non-tangible

benefits and enjoying networking and partnership privileges in the markets (Gummesson et al, 2002). Most importantly, as noted by Sheth & Parvatiyar (2000), RM is considered to be a longitudinal process of value exchange between supplier and customers, built through interactive engagement of all relationship parties, rather than occasional one-way off transactions. Stemming from this, strategically sound and target-sensitive communication is considered to be a crucial component in incorporating RM approach to conducting business (Gummesson, 1987).

The issue of communication and interaction in exchanges constituting formation, development and maintenance of relationships (under the RM approach) is placed on the high rank of importance, especially for firms operating in services industries, where the interaction between service supplier and customer largely influences service delivery, service quality, and likelihood of exchange reoccurrence (Zeithaml et al, 2006; Gummesson, 2002). This is especially true for companies operating in service industries with highly intangible products, such as financial service institutions. The importance of relationship management and RM for financial service institutions has been of interest for researchers for over a decade, with studies generally examining the role of various service channels on the strength of relationships with customers (Dawes & Brown, 2000; O'Loughlin et al, 2004; Rootman et al, 2008). As suggested by Dowes & Brown (2000) and O'Loughlin et al (2004), RM approach proved to have significant benefits for the financial services businesses, with "relationship experience" contributing to enhanced service quality in terms of decreased information asymmetry, increased customer loyalty and satisfaction, greater scope for enhanced customer service and cross-selling opportunities. While the research in the domain of RM strategies and practices by financial service institutions has slowly developed into a recognized branch of its own, the strengthening power of business intelligence and online technologies has introduced new streams of studies in the area, focusing on the role that online communications e-business models, automated information systems and databases play in the development of customer relationship programs for retail banking institutions (Kapoulas et al, 2002; Kapoulas et al, 2004; O'Loughlin et al, 2004; Menon & O'Connor, 2007). It has become evident that organizations operating in "sensitive" and communication-intense industries, such as financial services, have to be ready to accommodate and support the kinds of relationships that customers demand, through channels of service delivery and interaction customers prefer. While it has been generally accepted that in the financial services industry the channel of service delivery largely determine the scope and depth of relationships with customers (with common wisdom suggesting that e-banking customers prefer transactional relationships, while branch customers seek for more personal and interaction-intense treatment) (Kapoulas et al, 2002; Kapoulas et al, 2004; O'Loughlin et al, 2004; Rootman et al,2008), the latest advances in online communication technologies demonstrate progress in enabling development and support of genuine relationships between individuals and

organizations in the virtual setting (Zineldin, 2000; Dawes & Brown, 2000). However, the scope of transferring RM programs and strategies in the new-age interactive online setting for the financial service institutions is still relatively intact territory waiting to be explored, and is the subject of further text.

3.   The Rise of Web 2.0 Communications and Their Significance to the RM Approach

The reality of social communications and business-to-consumer marketing obtained new dimension post year 2000, as new models of communication via interactive online channels emerged and started gaining incredible popularity and mass acceptance at rapid pace unseen before. Commonly referred to as Web 2.0 or "social media", they introduced a dramatically different perspective on information-sharing and interaction on the Web, by shifting the power over online content from the authority of organizations to the collective force of independent web users (Iverson & Vukotich, 2009; Kozinets, 2009). Introduced in the form of user-friendly sites, tools, platforms and applications (such as blogs, online social communities, wikis, podcasts, RSS feeds, vlogs, tweets etc), social media used "pull technology" that "connects people" and actively engages them in the creation and management of online content, allowing individuals to freely contribute to information publication and information-sharing (through interactive exchange of individual's experiences, knowledge, opinions, criticisms, reviews etc and networking) (Ewing, 2008; Pnnunzio, 2008; Dearstyne, 2007).

Although of relatively young age, over the past few years Web 2.0 indicated the power to appeal to masses, by allowing people to create news and trends within the domain of their own interests and to form online groups and communities sharing common traits and goals (Stone, 2009). This opens new opportunities and challenges for marketing in the forms of new highly fragmented and narrowly defined consumer markets, new variety of communication channels to reach consumers, and new standards of communicating messages to people (Ewing, 2008; , Pnnunzio, 2008). There is already a vigorous discussion regarding the opportunities Web 2.0 channels such as Facebook, YouTube, Twitter, Digg, (to name a few) and consumer blogs present to marketers for gathering insights into genuine customer interests, communicating with customers on the private level in the online setting, and developing steady relationships with customers through interactive online conversations (Kozinets, 2009; Comley, 2008; Casteleyn et al, 2009). These opportunities further lead to a question of whether it is possible to leverage the power of social media in the pursuit of RM, stemming from observations that RM theory and Web 2.0 share common assumptions that relationships are crucial for the support of ideas and

ventures (be it business or social), but are dependent on meaningful, interactive, and consistent exchanges (Pannunzio, 2008; Sheth & Parvatiyar, 2000). While the interest in the possibility to translate RM approach in the Web 2.0 setting is on the rise, there is relatively little research dedicated to exploring the prospects of this idea so far (Liang et al, 2008; Cooke, 2008). Academic marketing journals increasingly stress the importance of research efforts that will seek to explore the possibilities for Web 2.0 implementation in various branches of marketing, and how these will vary across different industries (Cooke, 2008; Beer, 2008; Cocheo, 2009b; Dearstyne, 2007; Hardey, 2009).

While most of the current marketing programs in Web 2.0 channels are led by the initiatives of consumer product companies, there is a growing interest in leveraging the opportunities of Web 2.0 communications in marketing programs of financial service institutions (Cocheo, 2009a; Stone, 2009; Pannunzio, 2008). Stemming from the past research efforts and commentaries on the role of electronic media networks and e-business models in bank marketing (Dawes & Brown, 2000; Kapoulas et al, 2002; O'Loughlin et al, 2004), further exploration of online marketing communication possibilities via new Web 2.0 channel seems to be only natural. Bank marketing literature has already singled out several practical examples of initiatives by retail financial institutions in UK and US to incorporate Web 2.0 online social communities and podcasts in branding and internal marketing initiatives (Kupp & Anderson, 2007; Bielski, 2008b; Stone, 2009; Cocheo, 2009a, Hardey, 2009). Although pioneers of these innovative Web 2.0 marketing strategies in bank marketing are cautious about their further advances in the field due to sensitivity of customers to the delivery and promotion of banking products and services, the interest towards expansion of Web 2.0 interactive communications in the domain of RM and customer service is already on the rise (Stone, 2009; Liang et al, 2008; Pannunzio, 2008). Recent papers on the RM in financial services displayed interest in the online communication opportunities and the introduction of the "social" element to the RM strategies, proposing further research efforts to concentrate on the "virtual RM" and possibilities for the online support of RM customer programs (O'Loughlin et al, 2004; Menon & O'Connor, 2007; Liang et al, 2008). Academic journals already theorize possible opportunities and benefits financial service institutions would enjoy by incorporating Web 2.0 communication platforms to support their RM customer programs, including: (1) greater depth of understanding customer behaviour and attitudes towards bank marketing efforts including RM programs, scope for advanced customer segmentation and niche targeting; (2) scope for effective branding and cross-selling opportunities; (3) obtaining real-time valuable customer feedback on banking services and marketing offers; (4) customer engagement in the delivery of service and creation of new products; (5) enhanced integration of overall marketing efforts; and (6) scope for building competitive advantage based on established relationships with customers in their own terrain of social media (Stone, 2009; Rootman et

al, 2008; Pannunzio, 2008; Dearstyne, 2007; Cocheo, 2009b; Bielski, 2008a). However, majority of traditionally-oriented financial services institutions still remain sceptical to these grand promises of Web 2.0 revolutionizing RM in the industry, stating the issues of information privacy, loss of control, and implications on corporate image as real challenges standing on the way to officially approving social media projects in RM strategies (Stone, 2009; Pannunzio, 2008). Furthermore, as identified by Stone (2009), the decision to dive into Web 2.0 communications has to be tightly aligned with organization's strategic take on the degree of transparency presented to the publics and readiness to tackle both positive and negative customer reactions online. Even majority of financial service organizations who did make small steps towards Web 2.0 are still careful to evaluate their achievements in social media and how these projected on the bottom line, leaving large gap in knowledge on the emerging practical issues in incorporating Web 2.0 communications in strategic marketing efforts in banking to be filled. There is a need for research that will explore and define the kaleidoscope of aspects that determine the scope of transferability of RM efforts by retail financial institutions in Web 2.0 world of communications, which will serve as a reference point in future assessments of achievements in the field (Pannunzio, 2008; Stone, 2009).

4.   Where Does the SEE Region Stand on the Advancements in Web 2.0 Communications in RM Strategies by FSIs?

According to Arnaboldi & Claeys (2008), there are significant differences in the roles that Internet plays in the delivery and support of banking services across Europe. Generally, the tendencies of internationalization, consolidation, and subsequent tighter competition in the EU banking sector have contributed to the alterations in business strategies and progressive adoption of Internet communication as new source of competitiveness (Arnaboldi & Claeys, 2008). However, the rate and extent of incorporating online services and communications by financial institutions varies significantly from country to country, with Northern European countries (esp. Finland, Sweden, UK, Germany) offering much broader scope of online financial services and enjoying greater customer popularity than the Mediterranean countries (such as Spain, Italy, Greece) or the countries of South-East European (SEE) region (Arnaboldi & Claeys, 2008; Lopez Zafra, 2002). Traditionally, major reasons for such discrepancies across the continent were generally attributed to differences in economic powers and technological advances among countries in different regions in Europe. However, recent insights suggest that differences in consumer culture also play crucial role in determining customer predisposition to demand and refer to online channels for the delivery and support of their personal financial businesses with financial service institutions (Lopez Zafra, 2002). Research

by Lopez-Zafra (2002) revealed that almost 80% of retail bank customers across Europe considered common online financial services (i.e. e-banking) to be too impersonal and suitable only for transactions, while majority of customer perceived that forming trustful relationships with financial service providers via old forms of online presence was unattainable. With this in mind, an interesting remark was made, revealing insights for the RM efforts by financial institutions for customers and their growing habit for online interactions (Lopez Zafra, 2002, p. 350): *"[...] Customers have fallen into the cost trap, asking for a personal touch in their relation with the bank but not willing to pay for it. This shows that an effort has to be made by entities in the sense of teaching customers the advantages of digital relationship."*

The importance of personal communication and trust in the online interaction were considered particularly evident for Southern European countries, and these factors were regarded as major determinants for customer interest in online retail banking services (Arnaboldi & Claeys, 2007). Southern European countries display comparatively lower development of online banking services, under the premise that customers in these countries show greater value and preference for personal and socially-inducing interaction with financial institutions (Lopez Zafra, 2002). Considering socially engaging, interactive, and relationship-oriented principles of Web 2.0 communications, there is a question of how can the interactive and socially inducing properties of Web 2.0 communications be leveraged by financial service institutions to fulfil the gap of online financial services and promote RM efforts to customers online?

While there is evidence of the first advances to incorporate Web 2.0 communications in support of marketing and RM strategies by retail financial institutions in the US and the UK (Stone, 2009; Cocheo, 2009a; Kupp & Anderson, 2007), the situation with the rest of the continental Europe is less known. This is especially true for South-European countries, where research in the field of RM strategies of financial institutions and online financial services are relatively limited in volume and scope. Research by Argyriou et al (2005) provided insights on the implementation of RM approach via e-banking initiatives in Southern Europe, through a study focusing on the case of Greece. Study by Koutouvalas & Siomkos (2006) revealed that retail banking sector in Southern Europe had demonstrated significant investments in the past years in communication with customers over Web and mobile technologies, indicating interest by banking institutions in more customer-oriented approach towards communication technology-enabled RM. However, these evidence are few and do not incorporate the insights on the relevance of newest communication trends, such as Web 2.0. Based on this scarcity of theoretical and practical, there is a need to explore the potential existence of the similar Web 2.0 RM initiatives by financial institutions in the South-Eastern Europe, to compare and contrast the advances in the adoption of these innovative communication technologies in

the RM field, and to identify the underlying predispositions and concerns for their implementation in the region.

5.   Research Scope and Approaches

Based on the literature review presented above, there is a gap in available research on the scope of incorporating Web 2.0 communication technologies in RM strategies by financial services institutions (Stone, 2009; Pannunzio, 2008). Moreover, this gap is more evident in the research addressing the practices of Web 2.0 implementation in marketing strategies by financial institutions in South-Eastern Europe. Based on these observations, a need for further research emerges, which would tackle current questions on the opportunities and hindrances Web 2.0 presents to the execution of RM strategies in financial services and would help predict the course of its implementation in bank marketing in the future. Research presented in this paper focuses on exploring the possible answers to these questions. The following text explains the focal points of the research and its approach in more details.

5.1   Research Scope and Objectives

It is within the scope of this research to:

- Raise the question regarding the future of RM approach within the context of contemporary digital environment, by exploring the scope for leveraging the social power of interactive Web 2.0 technologies in RM approaches and strategies. The focus in this quest is on the theoretical and practical implications for the financial services industry and its consumer markets in the under-researched region of South-Eastern Europe;

- Explore the phenomena of Web 2.0 and RM through the conduct of qualitative research in order to obtain in-depth exploratory and explanatory insights on the "how' and "why" questions of Web 2.0 implementation in RM practice for the specific industry and region.

The theoretical and practical insights on the scope of Web 2.0 implementation in RM strategies by financial institutions in SEE are expected to be obtained through the fulfillment of the following objectives:

1. To obtain explanatory and descriptive information on the RM approaches implemented by retail banks in SEE and the current uses of Internet communications in RM and other marketing customer programs;
2. To obtain descriptive insights to whether and how retail banks in SEE implement Web 2.0 communications in their customer relationship/marketing strategies;
3. To obtain descriptive data reflecting attitudes, opinions and feelings of bank customers and Web 2.0 audiences toward the use of Web 2.0 channels in short-term and long-term communication with banks;
4. To obtain explanatory and descriptive information on the progress of efforts to incorporate Web 2.0 communications in marketing and RM programs by retail banks in SEE;
5. To obtain explanatory and in-depth insights on practical implications for possible strategies, tactics, approaches and prerequisites for incorporating Web 2.0 communications in RM strategies of retail banks in SEE.

5.2 Methodological Approach of the Research

The primary goals of the research are to explore, identify, describe, and explain the "how" and "why" aspects of the potential to leverage the power of Web 2.0 communication in the implementation of RM approach by financial service institutions in SEE countries Thus, the main interests of this research are to obtain explanations, descriptions, understanding, and rationale of the various factors determining the implementation of Web 2.0 and RM, which were not specified before within the practice of financial services industry in the SEE region. (Therefore, it can be also stated that it is not within the interest of this research to measure, quantify, or find statistical correlations between the phenomena of Web 2.0 and RM, under the understanding that the variables linking them are not specified yet for the context of the specific industry and region). Based on this, the research is set to follow the approach of interpretivist qualitative methodology in the quest to explore the aspects that shape and determine the scope of Web 2.0 implementation in RM strategies by financial institutions in SEE.

According to Carson et al (2001) and Hanson & Grimmer (2007), qualitative research approach is especially suitable for the studies in marketing seeking to explore phenomena with relatively limited base of prior theory and knowledge (such as the implementation of Web 2.0 in RM), as it pursues "deeper understanding of phenomena" and allows researchers "to produce insight rather than measure, to explore rather than pin-down" the forces that influence particular marketing practices. The interpretivist qualities of this research approach are also relevant for the present research

as they permit: (1) to focus on the marketing phenomena in the natural organizational setting, (2) to extract value from the versatility of perspectives through the emphasis on specific cases and groups, (3) to obtain richness and holism of insights, and (4) to explore lived experiences, processes, perceptions, and assumptions in the new area of research (Miles & Huberman, 1994).

5.3 Research Methods

Research incorporates the implementation of multiple qualitative research methods in order to: (1) explore the scope for Web 2.0 implementation in RM from the perspectives of different stakeholders (both financial service institutions and their customers), (2) to obtain the versatile outlooks on the reality of Web 2.0 implementation in RM in SEE in financial services, and (3) to ensure in-depth understanding of the examined phenomena through multi-method triangulation (Dawes & Brown, 2000). As proposed by Denzin & Lincoln (2005, p. 5): *"The combination of multiple methodological practices, empirical materials, perspectives, and observers in a single study is best understood, then, as a strategy that adds rigor, breadth, complexity, richness, and depth to any inquiry"*.

Research incorporates qualitative research methods of multiple case studies (Eisenhardt, 1989; Yin, 2003; Perry, 2001; Stavros & Westberg, 2009), "key-informant" in-depth interviews (Dorussen et al, 2005; Patton, 2002), focus groups (Threlfall, 1999; Onwuegbuzie et al, 2009), and netnography (Kozinets, 2009), with each method dedicated to correspond to different research objectives outline earlier (Figure 1). Similar collection of multiple qualitative research methods was incorporated in the past studies tackling the issues of RM strategies and online banking services by financial service institutions in Western Europe (Kapoulas et al, 2002; Kapoulas et al, 2004; O'Loughlin et al, 2004; Stone, 2009). This provides support to the selection of research methods and increases the likelihood of successfully achieving the outlined research objectives.

The following text in this paper will not provide in-depth explanation for the rationale of the inclusion of each qualitative method in the study and their detailed procedures of implementation, but will rather explain the approach currently implemented in the first stage of the research – multiple comparative case studies.

Multiple comparative qualitative case studies are implemented in this research in order to explore the diversity of approaches, practices, opportunities, and obstacles regarding Web 2.0 implementation in RM strategies by a variety of financial service institutions (retail banks, in particular) across countries in SEE region (Kapoulas et al, 2004; Yin, 2003). In order to obtain the comparisons between the practices of financial institutions operating in the same country as well as in different countries in the region, the unit of analysis in this stage of research is defined as a case study depicting the practices of a single retail bank in one of the SEE

countries (i.e. Greece, Serbia, Bulgaria, FYROM etc). Thus, the collection of several units of analysis will enable intra-country and cross-country comparison of RM and Web 2.0 practices, and is expected to reveal the particularities of Web 2.0 implementation throughout SEE region (Eisenhardt, 1989; Stavros & Westberg, 2009; Yin, 2003). Research aims to include at least one case study per country of the SEE region (i.e. at least one case study on retail banks in Serbia, Greece, Bulgaria, FYROM etc) for the purpose of cross-country comparison of practices and issues. Units of analysis include both financial institutions currently implementing Web 2.0 communications in marketing strategies and organization not implementing them, for the purpose of exploring motives for Web 2.0 incorporation and rationale against it (Eisenhardt, 1989; Yin, 2003).

In-depth semi-structured "key informant" interviews and documentation analysis are the qualitative methods selected for the generation of case studies (Yin, 2003; Dorussen et al, 2005; Patton, 2002). "Key informant" interviews are qualitative method of data collection based on the in-depth interviews with experts in the field and people who can provide most relevant and in-depth knowledge in the researched field (Dorussen et al, 2005; Patton, 2002). In this research, "key informants" are identified to be top mangers of financial institutions representing individual cases in the study[34]. The open-ended semi-structured form of interviews ensures that key informants are addressed with the questions reflecting the scope of interests of the study and are provided with flexibility and freedom to express their own expertise in addressing research queries (Dorussen et al, 2005; Patton, 2002). Research aims to obtain interviews from several different managers working for the same financial institution in order to obtain more diverse and complete information on the practices (Patton, 2002; Dawes & Brown, 2000). Documentation analysis includes the assessment of information issued by financial institutions for marketing and customer relationship purposes (i.e. annual reports, press releases, marketing reports and promotional material, customer service reports and promotional material, corporate website promotional material, e-banking reports and promotional material, promotional material in Web 2.0 channels - official online social community pages, official blog pages, official video-log channels) (Kapoulas et al, 2002;

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[34] Participants for the in-depth semi-structured open-ended personal interviews currently hold one of the following (indicative) posts at the retail banking institution operating in SEE region:
- Marketing Director/Manager/Specialist
- Customer Experience Manager
- Marketing Research Officer/Analyst
- Relationship Marketing Director/Manager/Specialist
- CRM Director/Analyst/Specialist
- Web 2.0/Digital media/New Media/Internet Communications Manager/Specialist
- Customer Service Director/Manager/Specialist

Yin, 2003). The analysis of documentation is incorporated for the purposes of evidence support to interview data and within-case data triangulation of qualitative data (Dawes & Brown, 2000; Yin, 2003, Eisenhardt, 1989).

Stage 1 : Web 2.0 & RM from the Viewpoint of FSIs in SEE

Research Aims to Explore:

• How do FSIs in SEE region perceive and implement RM practice via online communications consumer markets?

• How do FSIs in SEE region perceive and leverage Web 2.0 communications?

• How do FSIs in SEE region perceive the potential for implementing Web 2.0 communication channels in RM strategies in consumer markets?

Research Methods:

Multiple comparative case studies of FSIs in SEE region (Kapoulas et al, 2002; Kapoulas et al, 2004; Stone, 2009):

o Focus on retail banking institutions ("brick-and-mortar" and online) in selected SEE countries

o "Key informant" interviews with elite managers of retail banking institutions in selected cases

o Collection & analysis of documentation and archives evidencing online RM efforts and strategies

Stage 2: Web 2.0 & RM – Customer Perspective

Research Aims to Explore:

• What are the experiences and attitudes of customers of FSIs in SEE towards online non-transactional communication with their financial service providers?

• How do customers of FSIs in SEE use Web 2.0 technologies in communication with companies?

• How do customers of FSIs in SEE feel about using Web 2.0 technologies to communicate with their financial service providers on non-transactional matters?

Research Methods:

• Focus Groups with customers of FSIs in SEE (Kapoulas et al, 2002; Kapoulas et al, 2004)

• "Netnography" – ethnography of communication occurring in Web 2.0 channels among individuals and organizations (Kozinets, 2009; Hine, 2000). Focus on topics of online and off-line RM efforts by FSIs in SEE

Stage 3: Evolving Ideas on Implementing Web 2.0 in RM practice

Research Aims to Explore:

• How is the idea of leveraging communication dynamics of Web 2.0 media in RM progressing for FSIs in SEE, given the insights from case-by-case practices and customer perspectives?

Research Methods:

Follow-up "key informant" interviews with the managers of FSIs addressed in case studies in Stage 1 (Kapoulas et al, 2002; Kapoulas et al, 2004)

Stage 4:

Preliminary development of emerging patterns/theories

Stage 5: Preliminary Drawing of Practical Managerial Implications

Research Aims to Explore:

• What is the scope for implementing Web 2.0 communications in RM strategies by FSI in SEE?

• What are the lessons learned from the experience of FSI in SEE incorporating Web 2.0 communication technologies in RM initiatives in consumer markets?

• How is the RM approach of FSI expected to evolve in the digital Web 2.0 social environment in the future in SEE region?

Research Methods:

Focus group with managers from various functional backgrounds of the selected FSI, examined as case study in Stage 1 (Kapoulas et al, 2002; Kapoulas et al, 2004).

Stage 6:

Finalization of Knowledge and Practical Implications

Figure 1: Diagram of Research Progression: Stages, Objectives, Methods

6. Preliminary Findings

The research is currently in the progress of early data collection within the scope of the first research stage (multiple comparative case studies). Up to the present moment the researcher has conducted one key-informant interview with a top manager of one of the largest banking institutions in Greece[35], and more interviews and documentation collection and analysis are in progress. While the researcher acknowledges that comparative qualitative data analysis can not be conducted with only one interview (Patton, 2002), the information obtained can be contrasted against the available literature on the topic, and can provide preliminary insights in the researched field. For this purpose, direct excerpts from the interview will be used in order to illustrate some of the key insights obtained (following the "emic' approach of qualitative reading), also allowing readers of this paper to form their own interpretations of the exemplified practices (Headland et al, 1990).

The interview revealed that Bank A has a functional strategically-designed online presence through a corporate website designed for the informational purposes (introducing bank's services, product categories, and information about branch networks and online transactional services), as well as e-banking entity, which is designated for providing simple non-branch transactional services to customers. The primary function of the bank's corporate website is characterized as: "[...]being able to give to the visitors the opportunity to communicate with the bank and ask specific questions or request specific products, enabling thus the bank to channel all these requests directly to those who are responsible in order to get in physical touch with client wither via telephone or personally, in order to propose specific products". There is lack evidence of bank's initiative to provide interactive two-way communication with customers online, with all complex informational queries by customer being re-directed to branch and telephone (call centre) services: "Internet information at the moment is more one-way. The bank gives some information for the products; there are visitors; they receive the information. In most cases they continue the discussion in person." Thus, the bank does not offer interactive communications means online in order to induce the support of relationships with customers, other than satisfying their demand for transactional online queries. The RM approach of the bank in consumer markets is strongly founded on the in-person branch-service. As key informant stated: "there is no non-physical banking relationship at the moment and I am not sure that it is going to be in the near future. There is a need of the physical contact in some part of the discussion."

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[35] Names of the interviewee and the bank are undisclosed due to data confidentiality agreement

Based on the interviewee's insights, there are several key issues preventing the transferability of RM approaches and strategies to communication with customers via interactive online platforms and tools. The mentality of bank's customers in Greece and their traditionalistic customs to conducting business with banks is one of the reasons the establishment and support of customer relationship through interactive online communications is considered unfeasible and impractical at the moment. As key informant explained: "*Customers in Greece have the tendency for the physical contact; they have also have preference for traditional customer relationship management.*" This is sound with the insights proposed by Lopez-Zafra (2002) stated earlier in the paper. While the interviewee suggested that bank's existing customers are generally favourably responding to the online transactional offers and services, this is not the case with the issue of managing their relationship with the bank via online channels. The issue of customer's trust in the bank and in the safety and quality of the extended service provided is considered to be one of the key reasons for the reluctance of Greek customer to engage in relationship with the bank via interactive online means, as perceived by the bank. As perceived by the interviewee: "*It's also the character of the Greek people which leads to face-to-face contact. And they are a little bit reluctant to rely fully upon electronic means. It is only done when the customer relationship is already there, they know the bank, they trust the bank, therefore they trust electronic system as well.*" However, when the bank has already established a relationship with an individual customer, the trust in the bank and its services is firmly grounded. In this case customer hesitation to open the doors of online communications to the relationship with the bank could be attributed to the long-term habit of conducting business with the bank in person-to-person, personalized manner. This habit often goes in pair with the lack of customer familiarity with the scope and possibilities of contemporary interactive online communication tools. Consequently, the unfamiliarity with the characteristics and potential of modern online channels leads to perception that these tools are faceless, computerized and impersonalized imitations of the treatment customers receive in the traditional branches, and are therefore not suitable for supporting their relationship-inducing interactions with the bank. "*Electronic computerized marketing relationship approach is not yet so familiar because it is not yet so well-known. I don't think it's a problem of trust, I'd say it's a problem of we do these things because we know these things and we've done them for many years. We prefer to speak to Olga, or Maria, or Giannis, or to Nikos, than to neutral electronic system.*"

Furthermore, the present situation of the economic recession in the country is also considered to produce impact on customer relationship with banks and the manners in which they are supported. As the interviewee suggested: "*The crisis throughout Europe lead to more conservative banking approach, more traditional, and traditional and conservative by definition limit the modern tools out.*" As noted, the times of economic crisis force the banks to re-group their priorities and re-directed their strategies, meaning that the banks tend to

focus on maintaining their existing customer base and enforcing the message of risk safety through traditional marketing approaches. Thus, considered as innovation that yet has to be introduced to the customer, interactive online communication through new media is ruled out. This might be contrary to what the literature on RM in Web 2.0 channels suggests – according to Stone (2009) and Pannunzio (2008), promotion of customer relationship management efforts through innovative online media channels is considered to have the potential to offset customer doubts and concerns regarding their business with banks in challenging times. More research is needed to understand in greater depth this contrast between theory and practice.

As stated by the interviewee, the bank does not have any form of official presence in the Web 2.0 channels. However, there is an indication of bank's interest in customer information exchange occurring in these channels, especially in reference to banks' brand and social image issues: "*My knowledge is that the bank is monitoring probable rumors being spread through these channels in order to protect, let's say, the good name of the bank, to stop that rumors in the beginning. [...] My understanding is that there have been specific researches ordered by the bank to outside companies and external contractors in order to find out the perceived image of the bank through various layers of the community. One part of this research was being done in these social channels.*" Although the interviewee revealed that the customer insights obtained from Web 2.0 channels are used in subsequent marketing strategy design, the interviewee noted that Web 2.0 research is outsourced to external organizations, thus detaching the bank from the actual hands-on experience of encountering the dynamics of customer conversation occurring online.

Moreover, an important insight was revealed during the interview reflecting bank's possible perception of and general attitude towards Web 2.0. Namely, the interviewee indicated that Web 2.0 channels, and in particularly blogs, are perceived as non–trustworthy as a source of information and a medium of communication. As stated: "*These blogs are traditionally considered as rumor spreading or not so reliable. And reliability would be I'd say the main characteristic of banking industry. You cannot use semi-reliable or dubious means or sources to send information to the people.*" This aligns with the cautious remarks observed in the literature in reference to possible reluctance of financial institutions to incorporate Web 2.0 media in their RM strategies, due to the perceived challenges of information privacy, loss of control, and negative implications on corporate image characteristic for Web 2.0 communications (Stone, 2009; Pannunzio, 2008). The interviewee suggested that "transparency" and "friendliness" are some of the factors that are required for the innovative online communications to "work" in customer relationship management and marketing. Further research is needed in order to explore these doubts in more depth and to identify potential ways for overcoming these challenges.

7. Further Research

While revealing interesting preliminary insights in the research topic, the paper refrains from drawing conclusions and generalizations on the scope for Web 2.0 implementation in RM strategies by financial institutions in SEE region. Instead, the paper proposes that further research is necessary on order to obtain more insightful and conclusive image on the transferability of RM approach in social media for financial organizations in SEE. Further research should investigate the possible advantages of Web 2.0 implementation in the field as well as its impediment, which could be used on devising practical strategic marketing implications in the future. Furthermore, it would be useful to discover examples of emerging tactics and approaches by some financial institutions in SEE to communicate to customers in Web 2.0 channels. Finally, insights on customer perspective through conduct of customer focus groups and netnography of Web 2.0 community in the subsequent research stages is stressed as essential for drawing final conclusions, generalizations, and implications of the research topic.

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Women managers – career and stereotypes

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Purpose: The purpose of the empirical study is to analyze specificities of stereotypes of woman and man managers, prevailing in Bulgarian employees.

*Research Methodology/Approach***:** In the first stage of the study, an interview for investigation of characteristics of the ideal manager was applied. It was addressed to 32 experts and determined 21 characteristics of the ideal manager.
In the second research stage, a questionnaire for evaluation of stereotypes of woman and man managers was distributed to a random sample of 751 employees. The questionnaire was compounded by two identical scales with 21 antonymous couples of the indicated adjectives that describe different characteristics of the ideal manager.

Findings: After the data processing the following main results were outlined:
- stereotype of woman manager is evaluated higher than stereotype of man manager according to some gender typified characteristics – women managers are considered to be more charismatic, sociable, organized, flexible, responsible, tolerant, exigent and physically attractive than men managers
- employees' gender, education degree and residence influence on stereotypes of woman and man managers – women, employees with secondary education and citizens of a smaller town evaluate stereotypes of managers of both genders more favourably than other subgroups

Originality/value: The research problem is up to date, because percentage of women managers on a world scale remains smaller (approximately 30% for EU27 countries) in comparison with that of men managers and with the total female presence in the labour market. The underestimation and loss of talented professionals, just because of their gender, impedes the optimal and effective organizational performance in actual conditions of high competency between companies and recent economic crisis. Present study is orientated to the analysis of gender role stereotypes – one of the main factors, generating barriers to the career development of women. The topic is not sufficiently

explored in Bulgaria. Results obtained may reflect the existence of a traditional positive attitude of Bulgarians towards capabilities of women in a position of responsibility. They could also be related to a processes of modernization of organizational life, which postulate as a basic value the work competence and the gender loses its importance.

Practical implications: Present research of stereotypes of women managers could be expanded, including samples of co-workers, business partners and human resources specialists. It could also be a base for study of another factors of influence in career development of women (except for the gender role stereotypes) – the organizational and personal factors. Results obtained could be taken into consideration by policy makers. The policy towards women's professional advancement should emphasize on the stimulation of their individual aspirations to perform a managerial activity. Therefore a specialized training programme for women and women managers (previously selected, on basis of their particular needs) with focus on development of a better motivation for achievement and a confidence in self-effectiveness, could be implemented.

Keywords: women managers, men managers, gender role stereotypes, professional career of women

1. Introduction

Percentage of women managers on a world scale remains smaller (approximately 30% for EU27 countries) in comparison with that of men managers and with the total female presence in the labour market (European Commission, 2009). It often happens that employees do not agree to have a woman as their direct supervisor. Culture and traditions make people see in the woman mainly the mother and in the man – the family leader who earns the maintenance. The underestimation and loss of talented professionals, just because of their gender, impedes the optimal and effective organizational performance in actual conditions of high competency between companies and recent economic crisis.

Presented facts emphasize the importance of study gender role stereotypes – one of the main factors, generating barriers to the career development of women. The topic is up to date, but it is not sufficiently explored in Bulgaria.

2. Managerial Position – Specificities of Women Managers

2.1 Management and Leadership

Before description of peculiarities of contemporary career of women managers and the determination of stereotypes of them, the concepts 'management' and 'leadership' have to be analyzed.

In Bulgarian scientific literature the idea of 'leader' usually refers to an informal leader, for the formal one, the concept 'manager' is applied. In Anglo-Saxon literature, there is not such a difference between the two terms – 'leader' is considered to be a more general concept and it could be used for both types of leaders (Russinova, Stoitsova *et al*., 2001). Hence, in present analysis the concepts 'manager' and 'corporate leader' are used as synonyms.

The managerial position is a degree of career advancement, related to specific obligations and responsibilities. The basic functions of the manager are **the planning, organization and control** (Gotsevski, 2004).

Managers are the main factor of influence on team and organizational effectiveness. The successful business leader in contemporary organizations has to combine the professional skills of a manager who organizes, controls and directs corporate activity with the personal qualities of a respected informal leader, capable to maintain a good communication with the colleagues and subordinates. An accent on the **image of an ideal manager** is put in the present study. That is a supervisor who is responsible for technical equipment, finances and work conditions in the organization, but at the same time motivates the subordinates and is concerned about their career development and work satisfaction.

Despite of the existence of empirical data about the universality of the basic characteristics for successful management (Sanyal and Guvenli, 2004), some specificities in the image of the ideal manager are observed in frames of different cultures (Brodbeck, Frese *et al*., 2000).

In relation to the peculiarities of **leadership characteristics of women managers**, it has to be emphasized that it is proved that in some cases women possess particular type of values, due to a gender specific process of socialization, which provoke the emergence and practice of leadership characteristics different from the men's ones. The leadership style of women is considered as more **oriented towards people** (Cuadrado, 2003; Cuadrado, García *et al*., 2001; Eagly and Johnson, 1990; Kabacoff and Peters, 1998; Rosener, 1990).

2.2 Women Managers – an Explanatory Model of Significant Factors in Professional Career of Women

The Industrial Revolution opened lots of doors for the working women whole over the world. Their participation in the work processes started growing extremely fast. The XXth century was a period of fight and gains in

different life spheres for women– from the free access to education to the aspiration to equal opportunities to start a work career. In the 90's of the last century they entered into managerial sphere.

Most of the women who try to reach managerial positions in organizations usually face the so called '**glass ceiling′** – a metaphor, related to invisible, artificial obstacles in front of many women, who aspire leadership positions (Burn, 1996). These barriers are a consequence of the existence of gender role stereotypes and the expectations they cause (Morrison, White *et al.*, 1987). It is considered that stereotypes of women could **provoke in people's mind a perception of women as unsuitable for a managerial role** (Burn, 1996).

The factor, determining the emergence of the 'glass ceiling' in organizations – gender role stereotypes, has to be placed and studied in frames of the larger context of the rest of the obstacles in front of women's professional career. Revised studies show that specific difficulties in career advancement of women are related to the influence of **formal, social-psychological, organizational and personal factors**. Based on the interactions between them, an explanatory **Model of significant factors in professional career of women** is proposed (see Figure 1).
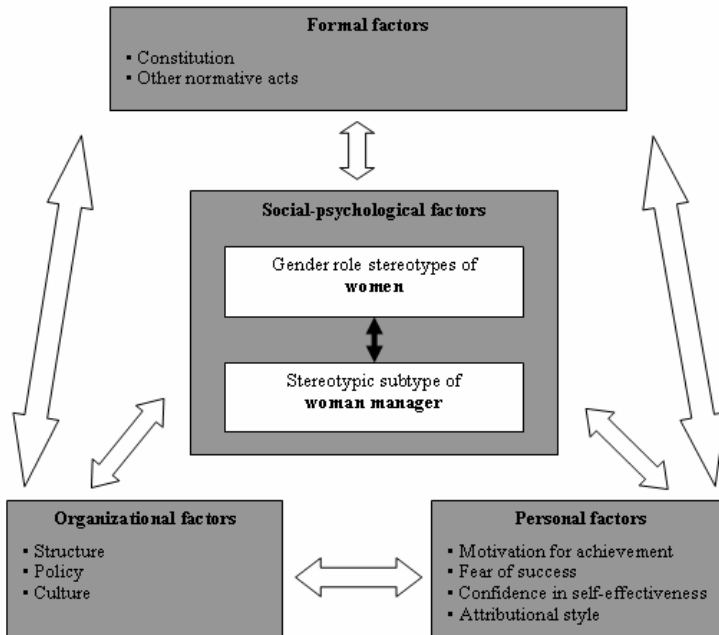
Figure 1. Model of significant factors in professional career of women

This is a system model and each factor is related to the others. In a particular situation some of these relations could become stronger and more remarkable, because all these factors function in the background of the historical and cultural development and the actual socio-economic situation in each country. Hence, series of particular researches are needed, in order to be possible to determine the strength and intensity of the presented relations.

The present study analyzes the **substantial intermediate factor** in this model – the **stereotypic subtype of woman manager**, prevailing in Bulgarian employees.

2.3 Situation of Women in Bulgarian Labor Market

During a large period of 45 years as a **totalitarian country** (1944-1989), Bulgaria had to demonstrate a high level of economic growth, despite of the isolation of the Camp of Socialist Countries from the 'Capitalist' world. However, in Bulgarian industry the technologies were not on a high level, which was an obstacle for improvements in the production. The great amount of human participation in a labor force became the most appropriate way to try to increase the production. Stimulating participation of good and talented 'workers' of both genders in all the sectors and levels of industry and social sphere became an aim of the Planned Economic policy. At the same time, this type of policy 'fitted' well into the propagated idea of communist government for 'equality between people'. Therefore, during large decades Bulgarian women had to work in the same way as men in all type of professional sphere and hierarchical levels.

The following **period of transition** started in 1989 and actually Bulgaria is still passing through it. This period has an important influence on employment and professional career, especially on women's ones. The large number of dismissals of work force and the suspension of the activity of many state organizations led suddenly to an increase of unemployment among both genders. The emerging private business offered work places principally for men, because the social policy, related to women (payment of maternity leaves, leaves for children illnesses, etc.) was not favorable for employers. Hence, this period is related to many difficulties for working women in general and especially for women, aspiring career development. They have to demonstrate better professional skills than those of men in order to be a preferred candidate for a work position or to run an own business as entrepreneurs.

According to the Constitution of the Republic of Bulgaria, the civil, trade and labor legislation, Bulgarian women have the legal right to participate in the economic life in an equal way as men (Nikolova, 1994). In 2003 the Parliament passed the Law on Protection against Discrimination, which

forbade any direct or indirect discrimination on the base of people's gender, race, nationality, etc.

The recently concluded **membership of Bulgaria in the European Union** in 2007 intensifies even more the requirements towards the country, related to the establishment of gender equality.

According to the represented analysis of historical peculiarities and actual situation in Bulgaria, it could be summarized that there **are not any formal barriers** to the professional development of the both genders. But if there are some differences in career advancement of women and men, they are a consequence of the influence of one or more from the rest of the factors, compounding the **Model of significant factors in professional career of women –** social-psychological factors (gender role stereotypes and subtypes), organizational factors and personal factors.

2.4 Women Managers in Bulgaria – recent data

The growing number of women in high organizational levels should be related to an enhancement of their education level (Kotseva, 1996). The censuses of population carried out by the National Statistical Institute in the period from 1946 to 2001 show that the percentage of women with university education has a stable growth and since 1992 it has exceeded that of men in the towns, as well as in smaller villages (NSI, 2001). A statistical survey for the period from 2002 to 2006 determines that the share of women with university education continues to be higher than that of men. According to the information for 2007, **women are 59.07% and men 40.93% of the university graduates in the country** (NSI, 2008). Presented data reveal that nowadays the intellectual potential of women in Bulgaria could satisfy requisites of the labor market, including the high specific requirements for a managerial position.

The participation of both genders in the labor force in Bulgaria is relatively balanced. Data for 2007 show that **women are 46.77% of employed and men – 53.23%** (NSI, 2008).

However, this approximately equal distribution in employment does not remain the same in a vertical plane. In 2007, the percentage of **men employers is 72.91% and that of women in the same position – 27.09%** (NSI, 2008).

The present analysis is not oriented towards the particular organizational level (middle or top level) of these managers. Hence, an accent will be put on data, revealing the percentage not just of women employers but that of women in all managerial positions in organizational hierarchy – positions, related to power, leadership, decisions making and supervision of subordinates.

In the EU27 in 2007 a third of the managers (including corporate managers and managers of small enterprises) were women. There were fewer female managers than male managers in all Member States, with the highest percentage of female managers recorded in France, Poland, Italy and Spain (see Table 1).

Table 1: Comparison between percentage of female managers in post-communist and 'west democracy' EU countries in 2007 (European Commission, 2009)

COUNTRY	Percentage of female managers in post-communist countries	COUNTRY	Percentage of female managers in other EU27 countries
Bulgaria	**30.1**	Belgium	30.8
Czech Republic	27.6	Denmark	26.2
Germany*	29.8	Germany*	29.8
Estonia	31.9	Ireland	21.1
Latvia	34.2	Greece	28.7
Lithuania	32.1	Spain	34.9
Hungary	28.9	France	39.2
Poland	35.0	Italy	35.0
Romania	27.1	Luxembourg	22.3
Slovenia	25.7	Netherlands	27.5
Slovakia	29.5	Austria	31.9
		Portugal	32.1
		Finland	17.4
		Sweden	24.5
		United Kingdom	33.2
Average post-communist countries	**30.2**	**Average 'west democracy' countries****	**29**

* Germany figures in both columns because it integrates the post-communist and the west countries heritage
** Malta and Cyprus are excluded from cited data, because their data lack reliability, due to small sample size

Percentage of women managers in post-communist countries is approximately equal to that in 'west democracy' EU countries. Data for Bulgaria coincide with the average for all EU27 countries, indicated on the table.

The cited data reveal that educational potential of women in Bulgaria is not completely utilized for all of them. Despite of prevailing over men with university education, women have a lower presence in the managerial sphere. This proportion depends on a large amount of factors, a great part of which are included in the represented **Model of significant factors in professional career of women**, among which are the stereotypes of women managers – the object of present study.

2.5 Stereotypes and Managerial Position

Stereotypes are generalized and usually based on values impressions about representatives of a particular group. Groups could be formed, according to different criteria, for example – race, gender, occupation, age, etc. (Stangor, Lynch *et al.*, 1992). Stereotypes are not always based on facts, so they often lead to an excessive simplification of the evaluation process and to wrong conclusions (Williams, De la Cruz *et al.*, 1989).

Despite of their stability, it is possible that in certain conditions some changes occur in stereotypes. Based on theoretical reviews, as principal ways for change of stereotypes the two cognitive models of M. Rothbart – **the bookkeeping model and the conversion model**, could be indicated. According to these models, the change of stereotypes occurs, due to the influence of information of the reality, which does not confirm the stereotypes (Rothbart, 1981).

Gender role stereotypes contain the experience of a large number of generations related to the desirable behavior of men and women in various situations, their peculiar character traits, moral qualities and virtues (Азарова, 2000). Most authors consider that principal differentiating stereotyped peculiarities are placed on the imaginary bipolar axis **'instrumentality-expressiveness'**. **Male roles** and way of living are more *'instrumental'* and oriented towards activity, and **female** ones are *'expressive'* and related to communication (Kon, 1990).

Gender role stereotypes exist in more general categories – 'women', 'men' and as more specific **subtypes** – 'career woman', 'businessman', etc. The borders between the subtypes are not so clear but they do contain different characteristics and people's evaluation of them varies (Deaux and Lafrance, 1998). According to the M. Heilman's Lack of fit model women are evaluated as less suitable for professions and work positions, considered as typically male (Heilman, 1983). It results that, if the managerial position, for example, is typified as 'male', people expect a male set of behaviors. Hence, applicants for managers or actual managers of the 'expected' male gender are considered to be more effective (Eagly, Makhijani *et al.*, 1992). Many researchers, confirm the wide spread assumption **'think manager, think male'**, that is to say, that the presence of qualities, required for a successful management, is more probable in men, than in women (Brown, 1979; Jabes, 1980; Schein, 2001; Willemsen, 2002). Therefore, masculinity is found to be

an important predictor for career success of women. It seems that women managers have to develop series of male qualities and demonstrate a kind of behavior, which is typical for men managers, in order to progress in the 'male' working world (Powell and Butterfield, 1979). However, there are evidences that the most successful managers are not the masculine ones but the androgynous – people, characterized with a flexible combination of masculine and feminine qualities, varying in dependence of situation (Powell, 1993).

2.6 Factors for Reliable Study of Stereotypes of Women Managers

The important role of stereotypes of women managers in presented explanatory **Model of significant factors in professional career of women** emphasizes the necessity of determination of peculiarities of these stereotypes in Bulgaria.

In order to make specificities of stereotype of woman manager more salient, they have **to be compared with stereotype of man manager**. These stereotypes have to be evaluated by means of a method, containing identical items in order to make possible the application of quantitative methods for statistical analysis in the following comparison between profiles of respective stereotypes.

The reliable study of women and men managers requires the determination of **specific managerial characteristics**, according to which their behavior could be evaluated (Sczesny, 2003). Hence, present empirical study includes a previous investigation of **peculiarities of the ideal manager**, as a base for the following evaluations of stereotypes woman and man managers.

Studies, conducted in **real organizations**, are considered as more reliable, because, in those cases, evaluators have work experience with direct subordinates of woman and/or man managers and are competent to evaluate managerial characteristics.

Moreover, it could be better if respondents evaluate in **one testing procedure** stereotypes of women and men managers due to the greater accuracy of the following comparison between different scales profiles (Fernandes and Cabral-Cardoso, 2003; Maher, 1997).
Present empirical study is structured, according to requirements indicated above towards the specificities of the method and the participants.

3. Aim, Tasks and Hypotheses

The **aim** of the empirical study is to analyze specificities of stereotypes of woman and man managers, prevailing in Bulgarian employees.

For the realization of the investigation purpose, the following **tasks** of the study are formulated:

First stage of the study
Task 1. To determine the basic characteristics, respondents ascribe to the 'ideal manager', not specifying his/her gender.

Task 2. To distribute respondents in subgroups, formed on the basis of different characteristics – gender, education degree and residence in the capital or in a smaller town.

Second stage of the study
Task 1. To analyze stereotypes of woman and man managers and to reveal the difference between them.

Task 2. To determine the influence of respondents' characteristics (gender, education degree and residence in the capital or in a smaller town) on their evaluation of stereotypes of woman and man managers.

Based on studies explored, in relation to the theoretical background of the empirical investigation, the following **hypotheses** are formulated:

Hypothesis 1.
It is supposed that there is a difference between stereotypes of woman and man managers, being the evaluation of stereotype of woman manager lower.

The hypothesis is formulated on the base of results of series of reference studies (Brown, 1979; Jabes, 1980; Schein, 2001; Willemsen, 2002), according to which it is considered in the society that the presence of qualities, required for a successful management is more probable in men, than in women.

Hypothesis 2.
A specific influence of respondents' characteristics (gender, education degree and residence in the capital or in a smaller town) on stereotypes of woman and man managers is expected.

There are not any data from past researches in Bulgaria, concerning the evaluation of stereotypes of woman and man managers. Therefore, some studies of foreign authors, presented in the theoretical background of the research, served as a base of formulated hypotheses. Cited foreign studies are not carried out with the same method as Bulgarian investigation, because it is culturally specific. Hence present study could not be considered as cross-cultural and formulated hypotheses just outline some expected tendencies. A comparison of interpretations of results of foreign studies is made.

It has to be considered that in the historical development of Bulgaria a significant differentiation between the role possibilities of men and women is not observed. The 'totalitarian heritage' with the image of 'women working in the same way as men' and the following period of transition, characterized with increased competitiveness in labor market, where women had to demonstrate fully their capabilities, could have led to an absence of negative stereotypes towards professional skills of Bulgarian women. Hence, it is possible to be determined some differences between the results of present empirical study and data, obtained in foreign investigations.

4. Method

4.1 Participants

In the first stage of the study a random sample of 32 respondents of both genders were included as experts. This number corresponds to the requirements for representativeness of a qualitative study. The criteria for selection of the experts were – a university degree in field of Work and Organizational Psychology, work practice as Human Resources specialists or experience in managerial position.

The data were collected by means of interview with the experts.

In the second stage of the investigation participated randomly selected **751 employees** in companies and organizations in the capital of Bulgaria (Sofia) and in a randomly selected smaller country town (Shumen). The survey was anonymous.

In order to achieve reliability of data received, a basic requirement towards respondents was to have as a minimum 1 year of work experience with a woman or a man direct supervisor, in order to be competent to evaluate managerial characteristics.

The frequency distribution of demographic characteristics of 751 respondents, aged from 20 to 70 years (mean – 36 years), with work experience from 1 to 47 years (mean – 13 years) is presented in Table 2.

Table 2.
Frequency distribution of subgroups of respondents, based on their demographic characteristics (N=751)

G R O U P S	Frequency	Percent
GENDER		
Men	345	45.9
Women	406	54.1
EDUCATION DEGREE		
Secondary education	231	30.8
University education	520	69.2
RESIDENCE		
Residence in the capital (Sofia)	697	92.8
Residence in a smaller country town (Shumen)	54	7.2

4.2 Materials and Procedure

4.2.1 Method for the investigation of characteristics of the ideal manager

The method was applied in the **first stage** of the empirical study and was addressed to the already mentioned **32 experts.** It consists in an **interview** that contains an open question oriented towards the determination of the main qualities, which are ascribed to the **ideal manager** in Bulgaria.

After a **frequency distribution** of characteristics, indicated by the 32 experts, 81 adjectives were obtained. These adjectives were ordered in **synonym groups**, by means of expert evaluation. The method applied by the expert team was **paired comparison** of the 81 adjectives, until the forming of 20 synonym groups. Every group is labeled with the adjective, fitting at

best to the meaning of all adjectives in the group. These 20 adjectives-labels of the groups were the base for the construction of the scale in the **Method for the evaluation of stereotypes of woman and man managers** – a questionnaire, which was applied in the **second stage** of the empirical study. The number of 20 adjectives included in the questionnaire is considered to be the optimal for people's psychological perception. The **'physical attractiveness'** was added additionally as a final item.

The 21 characteristics of the ideal manager obtained, which compounded the evaluation scale of stereotypes of woman and man managers, are as follows: **competent, charismatic, enterprising, creative, sociable, purposeful, scrupulous, organized, stress-resistant, decisive, realistic, analytical, effective, convincing, flexible, just, responsible, tolerant, exigent, willing to take grounded risk and physically attractive**.

4.2.1 Method for the evaluation of stereotypes of woman and man managers.

The method was applied in the **second stage** of the empirical study and was addressed to the mentioned **751 employees.** It is a **questionnaire**, compounded of two identical scales with 21 antonymous couples of the adjectives, which in the first stage of the study were proved to describe the ideal manager. According to these characteristics, the employees evaluated stereotypes of woman and man managers by means of 7-point bipolar scale.

There are empirical evidences of applicability and reliability of the 7-point bipolar scale of adjectives, related to managerial role, in the study and comparison between stereotypes of woman and man managers (Frank, 2001).

The first question of present evaluation method is **'How would you describe the typical woman manager in Bulgaria?'.** It is related to the evaluation scale of **stereotype of woman manager** in Bulgaria. The question **'How would you describe the typical man manager in Bulgaria?'** is followed by the evaluation scale of **stereotype of man manager** in Bulgaria.

The 7-point scale of the Method for the evaluation of stereotypes of woman and man managers, containing 21 couples of antonymous adjectives for description of these stereotypes, demonstrates a high internal consistency (**coefficient alpha Cronbach = .9196**).

The **statistical elaboration** of the empirical study's data was processed with the program *SPSS*.

5. Results

In order to test the formulated hypotheses series of comparisons between evaluations of stereotypes of managers of both genders were realized. The

comparison was made mostly on two levels – according to the general score of the two scales and according to the 21 basic characteristics of the ideal manager, included in these scales.

Data analysis shows that most of the evaluations of stereotypes of woman and man managers are grouped in the 'positive' area of the scale for characteristics of the ideal manager, that is to say, they are higher than the 'intermediate' value 4, dividing the evaluation scale into positive and negative area (see Table 3).

Table 3. Percentage of high and low evaluations of stereotypes of woman and man managers, compounded by basic characteristics of the ideal manager (N=751)

	Stereotype of woman manager		Stereotype of man manager	
	% lower than 4* (inclusively)	% higher than 4*	% lower than 4* (inclusively)	% higher than 4*
Competent	9.6	90.4	8.0	92.0
Charismatic	15.3	84.7	16.9	83.1
Enterprising	7.9	92.1	6.3	93.7
Creative	16.1	83.9	17.3	82.7
Sociable	5.6	94.4	8.4	91.6
Purposeful	7.6	92.4	6.8	93.2
Scrupulous	15.3	84.7	13.2	86.8
Organized	9.7	90.3	9.6	90.4
Stress-resistant	17.3	82.7	12.6	87.4
Decisive	8.3	91.7	6.5	93.5
Realistic	13.6	86.4	8.9	91.1
Analytical	13.7	86.3	9.6	90.4
Effective	11.6	88.4	9.7	90.3
Convincing	7.2	92.8	8.0	92.0
Flexible	9.6	90.4	12.0	88.0
Just	18.8	81.2	18.5	81.5
Responsible	8.1	91.9	10.7	89.3
Tolerant	19.2	80.8	19.0	81.0
Exigent	6.4	93.6	8.0	92.0
Willing to take grounded risk	19.7	80.3	14.5	85.5
Physically attractive	14.0	86.0	25.6	74.4

* The intermediate value divides the evaluation scale into positive and negative area

This 'positivism' demonstrates the favorable attitude of the sample of Bulgarian employees towards women and men managers.

According to the testing of formulated hypotheses, the following two basic results and conclusions could be indicated:

1. Bulgarian employees evaluate higher stereotype of woman manager than stereotype of man manager (according to general score and 8 characteristics). Therefore, the Hypothesis 1 for the higher evaluation of stereotype of man manager, based on foreign researches, is not confirmed. Data of the 2 Related-Samples Test is presented in Table 4.

Table 4. Statistical significance of differences between evaluations of stereotypes of woman and man managers, by comparisons of general score and basic characteristics of the ideal manager (N=751)

		N	Mean Rank	Sum of Ranks	Z	P
Stereotype of man manager/ Stereotype of woman manager (general score)	Negative Ranks	367	364.44	133750.50	-2.637	.008**
	Positive Ranks	325	326.24	106027.50		
	Ties	59				
Competent	Negative Ranks	143	164.91	23581.50	-.937	.349
	Positive Ranks	173	153.21	26504.50		
	Ties	435				
Charismatic	Negative Ranks	216	200.89	43392.00	-2.135	.033*
	Positive Ranks	177	192.25	34029.00		
	Ties	358				
Enterprising	Negative Ranks	196	166.32	32599.00	-1.662	.097
	Positive Ranks	148	180.68	26741.00		
	Ties	407				
Creative	Negative Ranks	200	181.93	36385.50	-1.733	.083
	Positive Ranks	163	182.09	29680.50		

	Ties	388				
Sociable	Negative Ranks	268	177.53	47579.00	-8.402	.000***
	Positive Ranks	89	183.42	16324.00		
	Ties	394				
Purposeful	Negative Ranks	179	170.86	30583.50	-.222	.824
	Positive Ranks	168	177.35	29794,50		
	Ties	404				
Scrupulous	Negative Ranks	195	183.96	35873,00	-.064	.949
	Positive Ranks	184	196.40	36137.00		
	Ties	372				
Organized	Negative Ranks	219	186.00	40733.50	-3.129	.002**
	Positive Ranks	152	186.00	28272.50		
	Ties	380				
Stress-resistant	Negative Ranks	160	174.73	27957.00	-3.156	.002**
	Positive Ranks	210	193.70	40678.00		
	Ties	381				
Decisive	Negative Ranks	157	172.58	27094.50	-2.358	.018*
	Positive Ranks	197	181.42	35740.50		
	Ties	397				
Realistic	Negative Ranks	145	165.83	24045.00	-3.241	.001**
	Positive Ranks	200	178.20	35640.00		
	Ties	406				
Analytical	Negative Ranks	142	190.73	27083.50	-5.531	.000***
	Positive Ranks	253	202.08	51126.50		
	Ties	356				
Effective	Negative Ranks	171	170.05	29079.00	-.618	.537
	Positive Ranks	176	177.84	31299.00		
	Ties	404				
Convincing	Negative	181	161.25	29186.50	-.922	.356

		N	Mean Rank	Sum of Ranks	Z	p
	Ranks					
	Positive Ranks	151	172.79	26091.50		
	Ties	419				
Flexible	Negative Ranks	230	186.90	42987.50	-5.906	.000***
	Positive Ranks	127	164.69	20915.50		
	Ties	394				
Just	Negative Ranks	188	186.52	35065.00	-1.042	.298
	Positive Ranks	175	177.15	31001.00		
	Ties	388				
Responsible	Negative Ranks	202	170.42	34425.50	-4.381	.000***
	Positive Ranks	127	156.37	19859.50		
	Ties	422				
Tolerant	Negative Ranks	239	186.97	44686.50	-3.014	.003**
	Positive Ranks	151	209.00	31558.50		
	Ties	361				
Exigent	Negative Ranks	183	159.51	29190.50	-2.890	.004**
	Positive Ranks	131	154.69	20264.50		
	Ties	437				
Willing to take grounded risk	Negative Ranks	137	179.82	24635.50	-4.504	.000***
	Positive Ranks	229	185.70	42525.50		
	Ties	385				
Physically attractive	Negative Ranks	291	181.00	52671.00	-10.329	.000***
	Positive Ranks	70	181.00	12670.00		
	Ties	390				

* p≤ .05
** p≤ .01
*** p≤ .001

Comparisons between stereotypes of woman and man managers, according to basic characteristics of the ideal manager are presented on Figure 2.
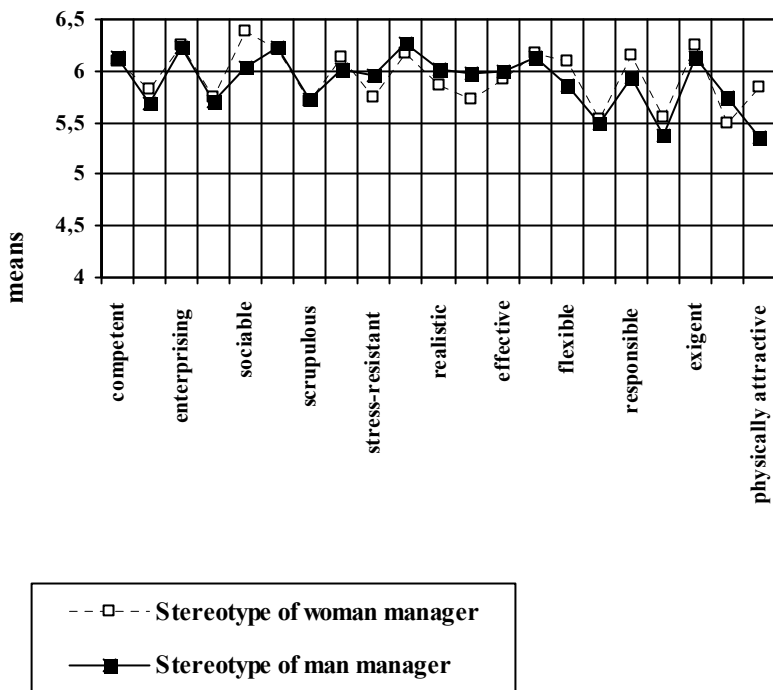
**Figure 2. Comparison between stereotypes of woman and man managers,
according to basic characteristics of the ideal manager**

Women managers are evaluated as more **charismatic, sociable, organized, flexible, responsible, tolerant, exigent and physically attractive** than men managers. The differences are statistically significant.

Man managers are considered to be more **stress-resistant, decisive, realistic, analytical and willing to take grounded risk**, in comparison with women. The differences are statistically significant again.

It could be concluded that observed differences are gender typified.

Stereotype of woman manager – the substantial intermediate factor of presented **Model of significant factors in professional career of women**, is not related to the expected underestimation of her managerial skills and capabilities, in comparison with those of man, independently that in some characteristics is evaluated lower, in most cases the evaluation is equal or

higher than man's. Therefore, it is possible that differences of the level of career advancement of both genders in Bulgaria are a consequence of the impact of other factors, compounding this model – organizational (structure, policy and culture) and/or personal factors (motivation for achievement, fear of success, confidence in self-effectiveness and attributional style).

2. Employees' characteristics gender, education degree and residence influence statistically significantly on stereotypes of woman and man managers. Data of the One-Way ANOVA is presented in Table 5.

Table 5. Statistical significance of differences between stereotypes of woman and man managers of employees with different gender, educational degree and residence, by comparisons of general score

	GENDER				**Significance**	
	Men		**Women**			
	M	**SD**	**M**	**SD**	**F**	**p**
	N = 345		**N = 406**			
Stereotype of woman manager (general score)	119.96	19.90	129.06	14.29	52.821	.000***
Stereotype of man manager (general score)	122.52	17.96	125.29	15.73	5.073	.025*

	EDUCATION DEGREE				**Significance**	
	Secondary education		**University education**			
	M	**SD**	**M**	**SD**	**F**	**p**
	N = 231		**N = 520**			
Stereotype of woman manager (general score)	127.40	16.42	123.76	18.12	6.851	.009**

| | Stereotype of man manager (general score) | 127.66 | 15.04 | 122.41 | 17.36 | 15.669 | .000*** |

	RESIDENCE				Significance	
	Sofia		Shumen			
	M	SD	M	SD	F	p
	N = 697		N = 54			
Stereotype of woman manager (general score)	124.35	17.71	131.70	15.97	8.760	.003**
Stereotype of man manager (general score)	123.53	16.88	130.22	15.18	7.983	.005**

* p≤ .05
** p≤ .01
*** p≤ .001

On base of results presented it could be summarized that women, employees with secondary education and citizens of the smaller town (Shumen) evaluate stereotypes of managers of both genders more favorably than other subgroups. They have more positive generalized impressions of managers in comparison with men, employees with university education and citizens of the capital. Their positive view could be a consequence of a general tendency to tolerance of these groups or of insufficient information, leading to greater idealization of discussed managers.

6.Discussion

Present study is realized by means of a culturally specific methodology, adapted especially for the Bulgarian sample. Methods, applied in foreign investigations, on which the hypotheses are based, are not the applied in present study. The investigation is not cross-cultural and that is why the idea of hypothesis is just to outline some expected tendencies of similarity and difference. On the base of presented analysis, it could be summarized that the results of study of stereotypes of women managers among employees in Bulgarian organizations reveal some specificities in comparison with the data from foreign researches, indicated in the theoretical review. The determined specificities probably reflect the influence of the historical and cultural

development of Bulgaria as well as of the actual socio-economic situation in the country. Results does not reveal the indicated by foreign investigators negative prejudices towards managerial capabilities of women managers – according to some gender typified characteristics, managerial skills in stereotype of woman manager are evaluated even higher than those of a man manager. It is possible that these results reflect the presence of a traditionally positive attitude of Bulgarians towards the capabilities of women in position of responsibility. They could also be a consequence of the processes of modernization of the organizational life, which postulate as a basic value the work competence and the gender loses its importance.

The research of stereotypes of women managers could be expanded, including samples of co-workers, business partners and human resources specialists. It could also be a base for study of another factors of influence in career development of women (except for the gender role stereotypes) – the organizational and personal factors. Results obtained could be taken into consideration by policy makers. The policy towards women's professional advancement should emphasize on the stimulation of their individual aspirations to perform a managerial activity. Therefore a specialized training programme for women and women managers (previously selected, on basis of their particular needs) with focus on development of a better motivation for achievement and a confidence in self-effectiveness, could be implemented.

Acknowledgements

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An initial investigation of shock transmission during the 2007-09 crisis in Europe

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We propose to use a non-structural multivariate vector auto regression framework in order to analyze 10-year yield changes for the GPIS group (Greece, Portugal, Ireland, and Spain) in order to investigate the global financial crisis of 2007–09. We use three years of daily yield changes for the GPIS countries. We estimate a 6-lag multivariate autoregressive model VAR(6), and the corresponding impulse response functions. As a result, we measure the effect of a one-time one standard deviation shock to yields from one market to current and future yield changes for other markets in the group. The economies of Spain and Portugal seem to be the most sensitive to yield shocks generated in other countries of the group. At the same time, the Greek and Irish economies seem to be sources of crisis information, since shocks generated in both produce significant effects for other economies.

Introduction

Today Greece, Portugal, Ireland, and Spain[36] (GPIS) are running large current account deficits and public debts and are perceived as lacking fiscal discipline, competiveness and efficiency. In an effort to stabilize financial markets and support the adjustment of European economies, the European

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[36] While Italy is also characterized by acute fiscal problems, comparable with the four countries above (leading some analysts to use the acronym PIIGS for the group), there is an ongoing discussion as to whether it should be included in the list. For ease of estimation we decided to include only four countries in the empirical part: Greece, Portugal, Ireland and Spain (GPIS).

Union and the European Central Bank (ECB) in 2010 adopted a comprehensive package of measures, the European Stabilization Mechanism.

In the long run, and in order to deal with concerns about the stability of the euro currency, it is believed that despite such measures that might help restore stability, the GPIS countries urgently need to restore strong and sustainable growth. For example they are at the bottom of the 2007 current account deficits list as it is reported by the IMF

Table 2: 2007 Current account deficits from Top (China) to Bottom (US). The four GPIS countries are very near the bottom of the list.

Rank	Country	CAB (in US $ billions)
1	China	372
2	Germany	252
3	Japan	211
.		.
.		.
.		.
168	Ireland	-14
172	Portugal	-22
176	Greece	-44
177	Italy	-53
180	Spain	-145
181	United States	-731

In the present study, we analyze 10 year yield changes for the GPIS countries, the strong deterioration of the Greek economy is captured by an average yield change of .2034bp that represents the largest average daily yield increase in the group. Furthermore, Greek yield changes are the most volatile with a daily volatility of almost 6.2bp, and exhibit positive skew and excess kurtosis. The next economy in trouble seems to be Ireland with yields that have increased on the average by .1054bp per day and a daily deviation of 5.2bp.

In our study we utilize the seminal idea of the generalized impulse response originated by Koop et al. (1996) and advanced in Pesaran and Shin (1998). In general, an impulse response function measures the time evolution of the effect of shocks at a given point in time on the (expected) future values of variables in a dynamical system. Essentially, an impulse response is the outcome of a *conceptual* experiment in which the time profile of the effect of a hypothetical shock vector hitting the economy at time t is compared with a

baseline evolution of the expected future system, given the current filtration

of the economy at the beginning of the tth period $\mathcal{W}_{t-1}$.

Koop et al. (1996) generalized the concept ensuring its *rotational invariance* through

$$GI_y(n, z, \mathcal{W}_{t-1}) = E[y_{t+n}|u(t) = z; \ \mathcal{W}_{t-1}] - E[y_{t+n}|\mathcal{W}_{t-1}]$$

Given the MA(∞) representation for the VAR (p) for **y**, the GI does not depend on current information

$$GI_y(n, z, \mathcal{W}_{t-1}) = \delta_n z$$

with (δ_n) to be the MA(∞) coefficient matrix. Instead, the choice of the applied shock vector **z** is critical in the impulse response function calculation.

In this VAR financial study for the four GPIS economies, the Greek and Irish economies seem to be sources of crisis related information with their shocks generating significant effects for other countries in the group. On the other hand, the Iberian Peninsula countries are absorbing crisis related information and exhibit strong sensitivities to foreign shocks.

2. Yield analysis and descriptive statistics

The dataset used includes daily closing levels of 10-year bond yields for the four GPIS (Greece, Portugal, Ireland and Spain) markets for the three year period 2007-2009. Centred around 2008, the period is chosen large enough to safely include a good sub-period of the 2008 financial crisis regardless of exactly when we put the beginning of the crisis. At the same time we chose the period to be relatively small so that the analysis focuses on the crisis implications, and we exclude the 2010 data when the Greek economy was singled out as the most problematic and the highest default probability. Specifically, our sample consists of the daily data from the end of 2006 (29/12/2006) to end of 2009 (31/12/2009).
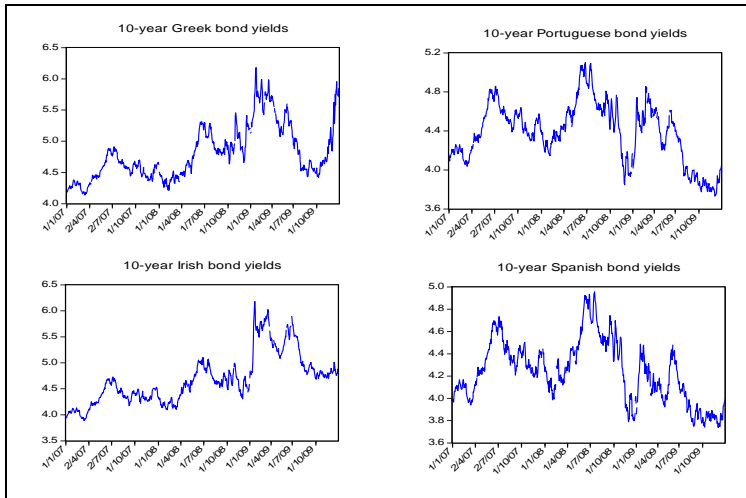
Figure 1: Plots of 10-year yields GPIS countries

Table (3) reports summary yield statistics for the four GPIS countries during the 3 year horizon. As we can see from table (3), the Greek 10-year bond yield presents the largest average yield for the group at approximately 481 bp[37], while it is characterized by the second highest volatility with positive skew and no excess kurtosis in compare with the other three examining countries. Irelands' 10-year bond yield presents the second highest mean yield (469 bp) with the higher standard deviation while it is skewed to the right with no excess kurtosis. It is also interesting that Ireland has registered the highest yield of all GPIS countries during the period at almost 6.18% that was very close to the Greek highest yield of 6.179%. Portugal's 10-year bond yield is lower, and on the average equal to 438.5 bp. Finally, the lowest mean yield is presented by Spain. Spain's yields also exhibit the lowest volatility in the group and no excess kurtosis.

Table 3: *Summary statistics for the 10-year bond yield of GPIS countries.*

	Greece	Portugal	Ireland	Spain
Mean	4.8141	4.3854	4.6913	4.2419
Standard Deviation	0.4371	0.3054	0.4827	0.2786
Skewness	0.8026	-0.1344	0.7738	0.2545

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[37] We use the symbol bp for basis points, i.e. 0.048141% = 4.8141bp.

Kurtosis	-0.1196	-0.5466	0.0485	-0.5539
Minimum	4.1374	3.7314	3.8861	3.7375
Maximum	6.1790	5.1003	6.1799	4.9564

3. Methodology

a. Unit root test

By graphical inspection of figure (1), the GPIS yield series seem to be non stationary time process. We thus start our multivariate analysis by testing the stationarity of the yield levels with the Augmented Dickey–Fuller (ADF) test (Dickey and Fuller, 1979). In the ADF methodology, each of the GPIS yield series is written as follows:

$$\Delta GR_t = c_1 + a_1 t + (\gamma - 1)GR_{t-1} + \sum_{i=1}^{k} \theta_{1,i}\Delta GR_{t-i} + u_{1,t}$$

$$\Delta PRT_t = c_2 + a_2 t + (\gamma - 1)PRT_{t-1} + \sum_{i=1}^{k} \theta_{2,i}\Delta PRT_{t-i} + u_{2,t}$$

$$\Delta IRL_t = c_3 + a_3 t + (\gamma - 1)IRL_{t-1} + \sum_{i=1}^{k} \theta_{3,i}\Delta IRL_{t-i} + u_{3,t}$$

$$\Delta ES_t = c_4 + a_4 t + (\gamma - 1)ES_{t-1} + \sum_{i=1}^{k} \theta_{4,i}\Delta ES_{t-i} + u_{4,t}$$

where it is assumed that $u_{i,t} \sim IId(0, \sigma_{i,u}^2)$, in all system equations above.

Finally, it is important to notice that, for the fitted error terms ($\hat{u}_t$) to be as close as possible to white noise, we have to select the correct number of lags based on an information criterion such as the AIC.

The null hypothesis for the ADF test is that series are integrated

$$H_0: (\gamma - 1) = 0$$

against the alternative hypothesis of no integration,

$$H_1: (\gamma - 1) < 0$$

T-tests in order to accept or reject the null hypothesis of a unit root are performed against critical values from the DF-distribution (Dickey and Fuller, 1981) and not from the classical t-distribution.

Table (4) shows the test results; the null hypothesis of nonstationarity cannot be rejected for all the markets inside the examining time horizon. So, the yield series $(GR_t, PRT_t, IRL_t, ES_t)$ can be assumed to be I(1) which means that we should take the first difference of them in order to achieve the stationarity.

b.   Multivariate analysis of yield changes

Since the yield series are non stationary, we are going to deal with the daily changes (i.e. first differences) of the 10-year yields for the GPIS markets rather that the original yields. For the difference series, we have the following descriptive statistics.

Table 5: *Descriptive statistics for the yield changes of the four examining countries*.

	Greece	Portugal	Ireland	Spain
Mean	0.00203	-0.00014	0.00105	-0.00024
Standard Deviation	0.06196	0.04283	0.05187	0.04364
Skewness	0.47926	0.44298	0.73910	-0.03223
Kurtosis	5.09715	2.77854	5.75728	0.70247
Minimum	-0.32600	-0.15698	-0.27814	-0.15109
Maximum	0.38400	0.26597	0.38346	0.14234

Table (5) reports the summary statistics for the 10-year yield changes during the sample horizon while figure (2) gives graphical representations of the yield changes. As we can see from table (2), the strong deterioration of the Greek economy is captured by an average yield change of .2034bp that represents the largest average daily yield increase. Greek yield changes are also the most volatile with the highest daily volatility of almost 6.2bp, and exhibit positive skew and excess kurtosis. The next economy in trouble seems to be Ireland with yields that have increased on the average by .1054bp per day and a daily deviation of 5.2bp. Portuguese and Spanish yields with slightly negative average yield changes, do not seem to exhibit any trend during the period. Further, yields for the two countries have produced much smaller extreme moves as evidenced by the low kurtosis values.
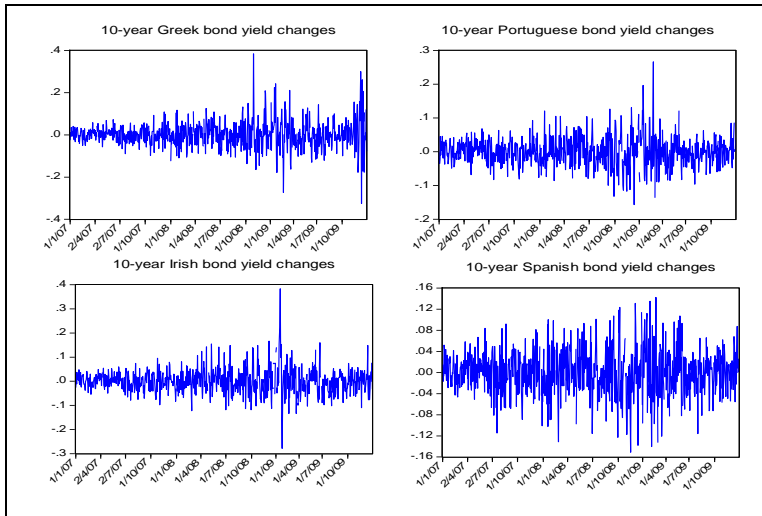
Figure 2: Yield Changed of GPIS Countries

We base our analysis on the footsteps of Koop et.al (1996), and are motivated by Diebold and Yielmaz (2010) who analysed the impulse response functions in order to quantify the spillover effect of volatility shocks in a market into the other markets.

In order to analyze the dynamic impact of random disturbances from one country to the other countries, we utilize a vector auto-regression (VAR). By treating every yield change in the system as a function of the lagged yield changes of all of the group countries, the VAR approach sidesteps the need for structural modelling of the yield dynamics.

More specifically, we assume that yield changes are generated by a VAR (6)[38] as follows:

$$\Delta y(t) = \gamma + \sum_{i=1}^{6} \Gamma_i \Delta y(t - i) + u(t) \quad (1)$$

where $\Delta y(t) = (\Delta GR(t), \Delta PRT(t), \Delta IRL(t), \Delta ES(t))'$ is the vector of daily yield changes for each GPIS country, $\Gamma_i, i = 1, \dots 6$ are the (4×4) matrices of coefficients to be estimated, and γ is a 4×1 vector of coefficients of the VAR (6) model respectively. Finally, $u(t)$ is the vector

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[38] we choose six lags for our model based on the AIC information criterion for VAR(p) modes, which is defined by: $AIC(p) = \ln(|\Sigma_p|) + \frac{2k^2 p}{T}$, where Σ_p is the residual covariance matrix of the VAR(p) equation.

of yield innovations. The $u(L)$ innovations may be contemporaneously correlated, but are uncorrelated with their own lagged values and uncorrelated with past yield changes. Because of the stationarity, we suppose for residuals that:

ADF test on 10-year bond yield for Greece							
D-lag	t-adf	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob
5	−1.725	0.97891	0.03204	0.4613	0.6450	−6.850	
4	−1.689	0.97949	0.03198	0.4182	0.6761	−6.857	0.6450
3	−1.659	0.97999	0.03193	0.1084	0.9138	−6.864	0.8241
2	−1.659	0.98012	0.03186	0.9823	0.3270	−6.872	0.9404
1	−1.578	0.98117	0.03186	0.7795	0.4364	−6.877	0.8520
0	−1.516	0.98200	0.03184			−6.882	0.8548

ADF test on 10-year bond yield for Portugal							
D-lag	t-adf	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob
5	−1.618	0.98292	0.02944	0.4311	0.6668	−7.019	
4	−1.585	0.98338	0.02939	−0.1677	0.8669	−7.026	0.6668
3	−1.613	0.98320	0.02933	1.531	0.1271	−7.034	0.8986
2	−1.478	0.98463	0.02941	−0.9534	0.3413	−7.032	0.4696
1	−1.573	0.98372	0.02941	2.776	0.0059	−7.037	0.4876
0	−1.328	0.98611	0.02981			−7.014	0.0523

ADF test on 10-year bond yield for Ireland							
D-lag	t-adf	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob
5	−1.831	0.97801	0.03116	0.2050	0.8377	−6.905	
4	−1.823	0.97828	0.03110	0.2552	0.7988	−6.913	0.8377
3	−1.809	0.97860	0.03104	0.7115	0.4775	−6.921	0.9480
2	−1.748	0.97946	0.03101	−0.6831	0.4952	−6.927	0.8942
1	−1.832	0.97861	0.0309	3.248	0.001	−6.933	0.8985
0	−1.524	0.98194	0.03157			−6.899	0.0459

ADF test on 10-year bond yield for Spain							
D-lag	t-adf	beta Y_1	sigma	t-DY_lag	t-prob	AIC	F-prob
5	−1.690	0.97822	0.03410	−0.05127	0.9592	−6.725	
4	−1.706	0.97816	0.03402	−0.2290	0.8190	−6.733	0.9592
3	−1.741	0.97787	0.03396	1.004	0.3163	−6.741	0.9729
2	−1.656	0.97904	0.03396	0.5130	0.6084	−6.745	0.7880
1	−1.620	0.97960	0.03391	−0.07168	0.9429	−6.752	0.8583
0	−1.636	0.97952	0.03384			−6.760	0.9323

Table 4: Unit root test on 10-year bond yield of Greece, Portugal, Ireland and Spain.

More specifically, we assume that yield changes are generated by a VAR $(6)^{39}$ as follows:

$$\Delta y(t) = \gamma + \sum_{i=1}^{6} \Gamma_i \Delta y(t - i) + u(t) \quad (1)$$

where $\Delta y(t) = (\Delta GR(t), \Delta PRT(t), \Delta IRL(t), \Delta ES(t))'$ is the vector of daily yield changes for each GPIS country, $\Gamma_i, i = 1, \ldots 6$ are the (4×4) matrices of coefficients to be estimated, and γ is a 4×1 vector of coefficients of the VAR (6) model respectively. Finally, $u(t)$ is the vector of yield innovations. The $u(t)$ innovations may be contemporaneously correlated, but are uncorrelated with their own lagged values and uncorrelated with past yield changes. Because of the stationarity, we suppose for residuals that:

$$E(u(t)) = 0 \text{ and } E(u(t)u(t)') = \Sigma,$$

Where, $\Sigma = \{\sigma_{ij}, \forall i, j = 1, \ldots, 4\}$ is a (4x4) positive definite matrix which represents the residual covariance matrix.

Clearly, we can write (1) in a moving average representation as follows:

$$\Delta y(t) = \delta_0 + u(t) + \sum_{i=1}^{\infty} \delta_i u(t - i) \quad (2)$$

Where $\delta_0 = [I - \sum_{i=1}^{6} \Gamma_i]^{-1} \gamma$, is the mean of the series assuming the weak stationarity for it. Moreover, the coefficient matrices satisfy the following structure:

$$[I - \sum_{i=1}^{6} \Gamma_i L^i][I + \sum_{i=1}^{\infty} \delta_i L^i] = I,$$

where I is the identity matrix.

Generally, we use (2) in order to measure the impact of a past shock on the current economy, where shocks are represented by changes to 10-year yields in our case. A shock to the i-th yield not only directly affects the yield of this particular country, but is also transmitted to all of the other economies through the dynamic structure of the VAR. An *impulse response function* traces the effect of a one-time shock to an economy in the GPIS on current and future values of the other yields.

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[39] we choose six lags for our model based on the AIC information criterion for VAR(p) modes, which is defined by: $AIC(p) = \ln(|\Sigma_p|) + \frac{2k^2}{T}$, where Σ_p is the residual covariance matrix of the VAR(p) equation.

If the innovations on yields where contemporaneously uncorrelated, interpretation of the impulse response would be straightforward. The i-th yield innovation simply transmits a shock to in the form of changes in the yield of the i-th economy. The key problem is that the disturbances are correlated, because of the non diagonal covariance matrix, and may be viewed as having a common component which cannot be associated with a specific yield.

In order to be able to interpret the effect of impulses, it is common to apply a transformation to the innovations so that they become uncorrelated. The ordinary way is to apply a Cholesky decomposition on the innovations (orthogonalization) in order to be uncorrelated before we calculate the impulse responses.

Let us suppose that there exit a lower triangular matrix (Λ) such that the residual correlation matrix (Σ) can be analysed as: $\Sigma = \Lambda D \Lambda'$, where D is a diagonal matrix and the diagonal elements of Λ is unity. Therefore, $D = \Lambda^{-1}\Sigma(\Lambda^{-1})'$.

The method uses the inverse of the Cholesky factor of the residual covariance matrix to orthogonalize the impulses, and thus define the orthogonalized innovations

$$s(t) = \Lambda^{-1}u(t)$$

Then we have the following moment conditions:

$$E(s(t)) = \Lambda^{-1}E(u(t)) = 0, E(s(t)s(t)') = D$$

If we rewrite the equation (2) as,

$$\Delta y(t) = \delta_0 + \Phi_0 s(t) + \sum_{i=1}^{m} \Phi_i s(t-i)$$

Where $(\Phi_0, \Phi_i) = (\Lambda, \delta_i \Lambda)$

Then, the coefficient matrices (Φ_i) represent the impulse response function of $\Delta y(t)$ with orthogonal disturbances. Koop et.al (1996) gave an analytical review of the orthogonalized impulse responses. The key weakness of the method is that it imposes an ordering of the economies in the VAR, and attributes all of the effect of any common innovation component to the yield that comes first in the VAR system. This approach is not invariant to the ordering of the variables in the VAR; the responses can change significantly if the ordering of the yields is changed, in which case we get completely different results for the OIRF (orthogonalized impulse response function).

In order to produce efficient impulse response functions which do not depend on the ordering of the yield changes, we have to use the method of *Generalized Impulse Response Functions (GIRF)* as described in Pesaran and Shin (1998). In this method an orthogonal set of innovations that does not depend on the specific yield ordering is constructed.

Generally, there are two representations of GIRF. The first is quite general in terms of that it considers shocking all the elements of $u(t)$ such as[40]:

$$GI_y(n, z, \mathcal{W}_{t-1}) = E(\Delta y(t+n) \mid u(t) = z, \mathcal{W}_{t-1}) - E(\Delta y(t+n) \mid \mathcal{W}_{t-1})$$
(3)

With $\mathcal{W}_{t-1}$ denoting the non-decreasing information filtration of the known

history of the economy up to time t-1. Alternatively, we can consider only one shock of $(u_j(t) = z_j)$. The following measurement gives the GIRF in this case:

$$GI_y(n, z_j, \mathcal{W}_{t-1}) = E(\Delta y(t+n) \mid u_j(t) = z_j, \mathcal{W}_{t-1}) - E(\Delta y(t+n) \mid \mathcal{W}_{t-1})$$
(4)

Based on the above we conclude to the following formulas for the OIRF and GIRF:
$I_j^o(n) = \Phi_n e_j$, is the orthogonalized impulse response function of a unit shock to the (*j*) equation of $\Delta y(t)$ where e_j is an (*4x1*) selection vector with unity in its *j*th element and zero otherwise. The corresponding GIRFs which came from (4) are given by:

$I_j^G(n) = \sigma_{jj}^{-1/2} \delta_n \Sigma e_j \; \forall n$. Again e_j is an (*4x1*) selection vector with unity in its *j*th element and zero otherwise and measure the effect of a shock with an impact as one standard error on (*j*) such as $(z_j = \sqrt{\sigma_{jj}})$. Additionally, it is assumed a multivariate normal distribution for $(u(t))$ as well.

Diebold and Yilmaz (2010) use some coefficients which are based on the above proportions in order to measure the volatility spillover effect between

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[40] Following Koop et al. (1996) symbols.

four components of US asset classes such as; stocks, bonds, foreign exchange and commodities inside the time period of financial crisis.

4. Results

We present the results for the estimated VAR (6)[41] in the following table for 10-year yield changes:

Table 6: *Estimated coefficients of a VAR (6) model for 10-year bond yield changes for the examining countries*

	Res,t	Rgr,t	Rpr,t	Rir,t					
Res,t-1	-0.056821	-0.11416	0.33309	0.304183	Rpr,t-1	0.470796	-0.003221	0.169332	0.318668
	-0.03897	-0.05528	-0.03927	-0.04036		-0.03869	-0.05487	-0.03899	-0.04006
	[-1.45791]	[-2.06528]	[8.48114]	[7.53767]		[12.1680]	[-0.05869]	[4.34310]	[7.95440]
Res,t-2	-0.23179	0.165514	0.044496	-0.036206	Rpr,t-2	0.064367	0.102911	-0.190709	0.299554
	-0.04232	-0.06002	-0.04265	-0.04382		-0.04384	-0.06218	-0.04418	-0.0454
	[-5.47709]	[2.75761]	[1.04340]	[-0.82627]		[1.46812]	[1.65504]	[-4.31662]	[6.59868]
Res,t-3	-0.037677	0.114507	0.034699	-0.011482	Rpr,t-3	0.178509	-0.05395	0.028087	0.246301
	-0.04354	-0.06175	-0.04387	-0.04508		-0.04575	-0.06489	-0.0461	-0.04737
	[-0.86543]	[1.85451]	[0.79093]	[-0.25470]		[3.90162]	[-0.83142]	[0.60920]	[5.19916]
Res,t-4	-0.022766	0.248592	0.011541	-0.031789	Rpr,t-4	0.023887	0.176738	-0.096283	0.095434
	-0.04318	-0.06123	-0.04351	-0.04471		-0.04685	-0.06644	-0.04721	-0.04851
	[-0.52728]	[4.05964]	[0.26526]	[-0.71108]		[0.50987]	[2.65993]	[-2.03949]	[1.96735]
Res,t-5	0.001605	-0.042521	0.005511	-0.02611	Rpr,t-5	-0.002061	0.167699	-0.041825	0.05832
	-0.04274	-0.06061	-0.04307	-0.04425		-0.04549	-0.06452	-0.04584	-0.0471
	[0.03755]	[-0.70153]	[0.12798]	[-0.59005]		[-0.04530]	[2.59913]	[-0.91235]	[1.23810]
Res,t-6	-0.010766	-0.060196	-0.002944	-0.040715	Rpr,t-6	-0.002952	0.052462	0.006521	0.059741
	-0.04117	-0.05839	-0.04149	-0.04263		-0.0439	-0.06226	-0.04423	-0.04545
	[-0.26150]	[-1.03091]	[-0.07097]	[-0.95511]		[-0.06726]	[0.84267]	[0.14742]	[1.31439]
Rgr,t-1	-0.000659	-0.005413	0.016356	-0.024817	Rir,t-1	-0.011812	0.172764	-0.03158	0.013675
	-0.02702	-0.03832	-0.02723	-0.02798		-0.03664	-0.05196	-0.03692	-0.03794
	[-0.02437]	[-0.14126]	[0.60074]	[-0.88709]		[-0.32239]	[3.32472]	[-0.85534]	[0.36046]
Rgr,t-2	0.013044	-0.095941	-0.017827	0.043058	Rir,t-2	0.003631	0.055495	0.029215	-0.067081
	-0.02653	-0.03763	-0.02674	-0.02747		-0.03675	-0.05212	-0.03703	-0.03805
	[0.49162]	[-2.54955]	[-0.66676]	[1.56729]		[0.09880]	[1.06472]	[0.78888]	[-1.76284]
Rgr,t-3	0.023256	-0.009281	0.068503	0.086848	Rir,t-3	-0.07448	0.014969	-0.005969	0.014538
	-0.02604	-0.03693	-0.02624	-0.02696		-0.03706	-0.05256	-0.03735	-0.03837
	[0.89310]	[-0.25131]	[2.61064]	[3.22110]		[-2.00970]	[0.28480]	[-0.15984]	[0.37887]
Rgr,t-4	-0.032024	-0.06531	-0.000306	0.025497	Rir,t-4	0.004164	-0.064446	0.018142	-0.098205
	-0.02592	-0.03677	-0.02612	-0.02684		-0.03675	-0.05212	-0.03703	-0.03805
	[-1.23527]	[-1.77631]	[-0.01173]	[0.94986]		[0.11330]	[-1.23657]	[0.48992]	[-2.58102]
Rgr,t-5	0.019566	-0.118361	0.008806	-0.009955	Rir,t-5	-0.002327	0.142855	-0.028086	-0.008358
	-0.02566	-0.03639	-0.02586	-0.02657		-0.03602	-0.05109	-0.0363	-0.0373
	[0.76252]	[-3.25233]	[0.34055]	[-0.37470]		[-0.06459]	[2.79612]	[-0.77371]	[-0.22407]
Rgr,t-6	0.018351	-0.100096	0.038807	-0.014942	Rir,t-6	0.036066	0.02915	-0.078048	-0.111539
	-0.02523	-0.03579	-0.02543	-0.02613		-0.03298	-0.04667	-0.03323	-0.03415
	[0.72723]	[-2.79692]	[1.52617]	[-0.57187]		[1.09367]	[0.62327]	[-2.34869]	[-3.26662]
					C	8.41E-05	0.003396	-0.000175	0.001242

[41] Table 6, presents coefficient values, their standard error and the t-statistic respectively.

Based on the above VAR (6) output, we present the generalized impulse responses of one standard deviation shock from each to each variable in the following table:

Table 7: *Estimated generalized impulse responses for the GPIS yields VAR*

Shock from Greece to Spain; Portugal; Ireland; Greece in six periods

Period	Spain	Portugal	Ireland	Greece
1	0.001010	-0.001216	0.009888	0.055974
	(0.00209)	(0.00209)	(0.00207)	(0.00148)
2	-0.004200	-0.000769	0.006782	0.000866
	(0.00214)	(0.00214)	(0.00210)	(0.00214)
3	0.009812	0.006423	0.002052	-0.005116
	(0.00216)	(0.00217)	(0.00215)	(0.00214)
4	0.008465	0.006912	-0.000186	-0.000245
	(0.00219)	(0.00219)	(0.00219)	(0.00212)
5	0.010993	0.013919	-0.001993	-0.002681
	(0.00223)	(0.00224)	(0.00224)	(0.00219)
6	0.002293	0.014163	0.003731	-0.004436
	(0.00229)	(0.00228)	(0.00226)	(0.00223)

Shock from Portugal to Spain; Portugal; Ireland; Greece in six periods

Period	Spain	Portugal	Ireland	Greece
1	0.009194	0.039770	0.002219	-0.000864
	(0.00147)	(0.00105)	(0.00148)	(0.00149)
2	0.014657	0.009682	-0.000118	0.000778
	(0.00158)	(0.00160)	(0.00160)	(0.00162)
3	0.002671	0.000102	0.000869	-0.000592
	(0.00162)	(0.00162)	(0.00159)	(0.00159)
4	-0.000752	0.001509	0.000725	0.003643
	(0.00162)	(0.00161)	(0.00160)	(0.00155)
5	-0.000419	-0.001446	0.000113	0.001154
	(0.00160)	(0.00161)	(0.00158)	(0.00153)
6	-0.000189	-0.001692	-0.000876	-0.000606
	(0.00156)	(0.00158)	(0.00152)	(0.00150)

Shock from Ireland to Spain; Portugal; Ireland; Greece in six periods

Period	Spain	Portugal	Ireland	Greece
1	0.001974	0.002280	0.040865	0.007219
	(0.00153)	(0.00152)	(0.00108)	(0.00151)
2	0.014937	0.015510	0.001600	-0.001349
	(0.00167)	(0.00166)	(0.00169)	(0.00171)
3	0.006843	0.020224	-0.001768	0.001676
	(0.00187)	(0.00180)	(0.00185)	(0.00185)
4	0.005176	0.012086	0.002274	0.005377
	(0.00193)	(0.00191)	(0.00192)	(0.00187)
5	0.003888	0.005665	-0.002923	0.001692
	(0.00193)	(0.00193)	(0.00191)	(0.00187)
6	0.000511	0.000938	0.000297	8.21E-05
	(0.00191)	(0.00192)	(0.00187)	(0.00183)

Shock from Spain to Spain; Portugal; Ireland; Greece in six periods

| Period	Spain	Portugal	Ireland	Greece
1	0.039467	0.009124	0.001907	0.000712
	(0.00104)	(0.00145)	(0.00147)	(0.00147)
2	0.002062	0.018179	0.000447	-0.000569
	(0.00165)	(0.00157)	(0.00162)	(0.00164)
3	-0.001926	0.003780	-0.000126	0.000950
	(0.00165)	(0.00165)	(0.00163)	(0.00163)
4	0.001775	0.002603	-0.002071	0.000423
	(0.00165)	(0.00165)	(0.00163)	(0.00159)
5	0.000875	0.000364	0.000401	-0.000210
	(0.00162)	(0.00164)	(0.00162)	(0.00157)
6	0.000196	-0.002821	0.000811	0.001384
	(0.00160)	(0.00162)	(0.00158)	(0.00155)
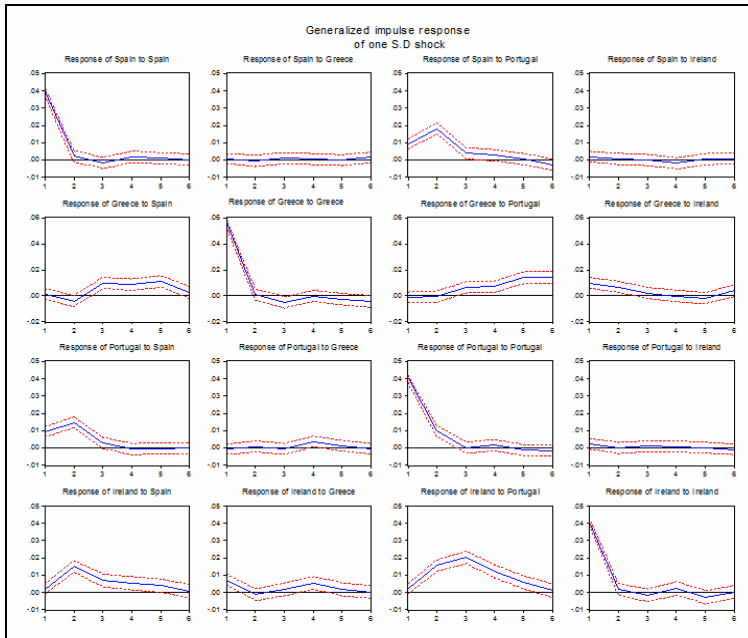
Figure 3: Impact of One SD Shock

We can see from table (7) and figure (3) that a shock of one standard deviation (S.D) on Spanish yields affects its economy[42] at a level of (.039) in the first period and continuously dies out fast as we allow the horizon of the impulse function to increase. Moreover, we estimate that this shock is transmitted only to Portuguese yields as an 182bp change two days later, while it doesn't appear to have a significant impact to other countries of the group.

A one S.D shock in the Greek economy affects yields in Spain and it dies out after the sixth period from its impact after having produced the maximum impact of approximately 110bp. We can observe that a shock from Spain produces minimal effects to Greek borrowing costs. A one SD shock in Greece produced an initially increasing effect of 140bp to Portugal that survives beyond the 6 day horizon of study. The opposite direction of a Portuguese shock effect for the Greek economy never rises beyond a 36bp effect. There are no significant transmission effects either way between Ireland and Greece.

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[42] Remember that by "economy" we mean the 10-year yield of each country.

A shock in Portugal affects the Spanish economy where it produces a 146bp effect two days later, and there is no significant effect for the other countries. The great brunt of a shock in the Irish economy affects Spanish yields by up to 150bp and is transmitted in 2 days later, and hits Portuguese yields by 200bp one day later.

5. Concluding Remarks

We have provided a multivariate time series analysis based on the generalized and orthogonalized impulse response functions in order to capture the effect of one standard deviation shock which was transmitted from one market to the other. When it was applied to the VAR(6) of 10 year yield changes for the GPIS markets it gave interesting results while showed the general picture of the crisis in these countries. The economies of Spain and Portugal seem to be the most sensitive to yield shocks generated in other countries of the group. Additionally, the Greek and Irish economies seem to be sources of crisis information, since shocks generated in both produce significant effects for other economies. For future work, we intend to utilise Italian yields in the VAR and use German yields as an exogenous source of information.

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Research on the effectiveness and efficiency in quality management

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Purpose: Ttranslation of Effectiveness and Efficiency definitions (the way these are stated in the SR EN ISO 9000 Standard) in terms, specific to the conformity determination procedures.

- Effectiveness: degree in which the planned activities are being completed and the planned results are being gained. (SR EN ISO 9000:2001).
- Efficiency: relation (ratio) between the gained result and the used resources. (SR EN ISO 9000:2001).

Effectiveness = degree of goal achievement

Effectiveness = ratio between the achieved and the planned goal

Research Methodology/Approach: The method is based on a case study, on observations of an existent situation and on the willing of quality process improvement. The project is about determination of an effectiveness improvement method and of the efficiency of quality assurance processes, starting from the calculating evaluation of these indicators. The project's goal is a rethinking of the actual concept regarding the quality control activity on the basis of effectiveness and efficiency principle. Within this project, my goal is to determine the calculating proportions of the efectiveness and efficiency of the control processes from the quality assurance activity and their practical check as well, by application of that formula to the activity of the quality management department of the company where I am working.

Findings:

- Improvement of the performances in the quality assurance
- Improvement of the performances in the conformity control on the basis of measurable goals
- Calculating formula determination of the effectiveness and efficiency, specific to the products control activity

Originality/value: The originality of the paper work consists of determination by calculation of the effectiveness and efficiency of the quality

control activity (quality management process) and as well of the interpretation manner of the achieved values. The method helps to the decision about the number of persons for an examination process, according to the type of check. For an accordant efficiency, the errors on a product have to be detected by the nominated personnel where these are being manufactured, not in the following processes or at the client.

Practical implications: The effectiveness formula determines in percentage, the reference between the number of errors discovered in a certain production phase, related to the total number of errors discovered in all phases, including the errors, noticed by external clients. The efficiency formula determines the discovery degree of errors, by the quality personnel, designated for this purpose on a certain production phase (cutting-off, assembly, final assembly) or on a certain checking process (process inspection, running inspection, final inspection). The more the number off errors discovered in the incipient production activities, the more the efficiency of the quality control activity is.

Keywords: Quality, management, effectiveness, efficiency, running inspection, final inspection

1. Introduction

Effectiveness and efficiency: two terms often confused, two terms that for many users mean the same. Although the standard SR EN ISO 9000:2006[43] presents definitions of effectiveness and efficiency, it is difficult to assess whether a given activity is or not effective or efficient. The problem is even more complex if we decide to determine the effectiveness and efficiency in quality management processes, belonging in this case to different quality control phases. Can effectiveness and efficiency be quantified? Can they be determined by a formula? How are the results of calculation to be interpreted?

To answer these questions, we started a project in Romania by DRM Draexlmaier Electric Systems LLC, so as to single out a method for determining the effectiveness and efficiency of quality control processes, as part of quality management, starting the assessment by calculation of these indicators. The project aims to rethink the current concept of quality control activities, by instituting the basic principles of effectiveness and efficiency. According to academic literature, through efficiency is understood the state of achieving predetermined targets. Effectiveness is assessed based on the effort (material / human) submitted to the objectives.

[43] SR EN ISO 9000:2006 – Romanian Standard corresponding to EN ISO 9000:2005 Quality Management Systems – Fundamentals and Vocabulary

If the effectiveness and efficiency of the production processes can be established by determining the efficiency or profitability, (calculated by using formulas), in the case of quality processes, such formulas could not be identified. With the help of this project I wanted to determine the calculus relationship between the effectiveness and efficiency of control processes and their verification in practice, applying these formulas within the quality management department I lead.

2. Definitions

Effectiveness: "the extent to which planned activities are realized and planned results are achieved" (SR EN ISO 9000:2006).
     - Effectiveness = objective achievement measure
     - Effectiveness = the ratio of realized and the proposed target
Efficiency: "relationship (ratio) between the results achieved and resources used" (EN ISO 9000:2006).
     - Efficiency = ratio of predefined quality objectives and effort required to achieve objectives.
     - Efficiency = is a measure of the economic (cost-benefit relationship).

3. Description of the method, determining the calculation formulas

We started from a situation assessment of the quality control activity, namely the control of the various production processes, following the flow chart of the control processes (fig.1).
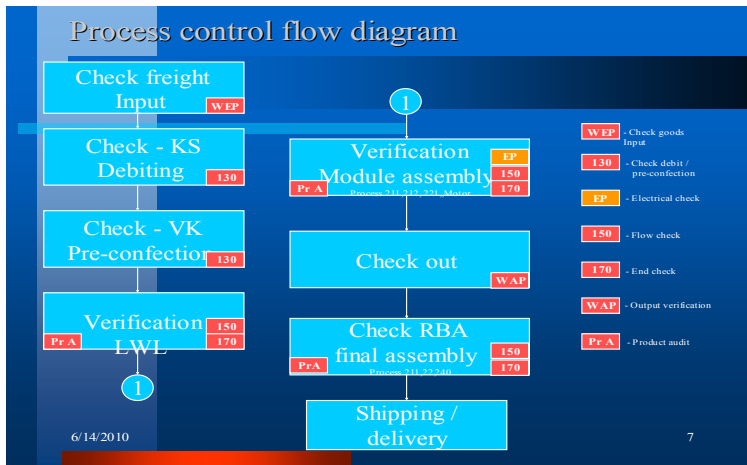
Process control flow diagram

Check freight Input — W EP

Check - KS Debiting — 130

Check - VK Pre-confection — 130

Verification LWL — Pr A — 150 170

1

Verification Module assembly — Pr A — EP 150 170
Process 211 212 221 Motor

Check out — W AP

Check RBA final assembly — PrA — 150 170
Process 211 22 240

Shipping / delivery

W EP - Check goods Input
130 - Check debit / pre-confection
EP - Electrical check
150 - Flow check
170 - End check
WAP - Output verification
Pr A - Product audit

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Fig.1 Process control flow diagram

It is very important to identify all phases of control over the production process.

The well known "rule of ten: the later a defect is being discovered, the more expensive are its implications and its correction"[44], cited in an intern Dräxlmaier schooling documentation by Gerschevski (2006) , is also applied in this case (fig.2).

We can observe from fig.3, that the highest costs of non-quality, occur when product defects are found in the most advanced stages of execution, exponentially increasing as we approach the final product. Costs are higher if product errors are discovered by the client, or even the end customer or the car buyer in the case of auto industry.

Home project aims in particular to:
Improve performance in quality management activities;
Improve performance quality control based on measurable objectives;
Determine formulas for calculating the effectiveness and efficiency, specific work product quality control;
Finding solutions to improve effectiveness and efficiency of quality control segments are observed to calculated values that fall outside the objectives.

Resources allocated to this project:
Human Resources: staff of the management quality department from the DRM company Satu Mare;

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[44] The rule of ten – Burkhardt Krems (2009) *10-er Regel der Fehlerkosten. [online].*
Contribution in Online Verwaltungslexikon olev.de – Version 1.12. Available from:
http://www.olev.de/0/10er-regl.htm [Accessed 24th June 2010]

Equipment: provide the quality workers with a minimum number of 30 computers;
Technical support and other school services: Quality Competence Centre.
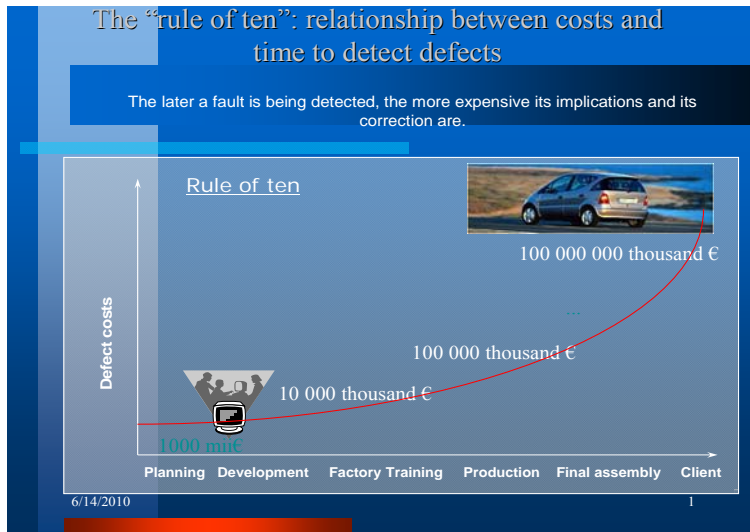

Fig.2 "The rule of ten"

This rule, applied to production processes in the DRM, looks like the figure below (fig. 3):
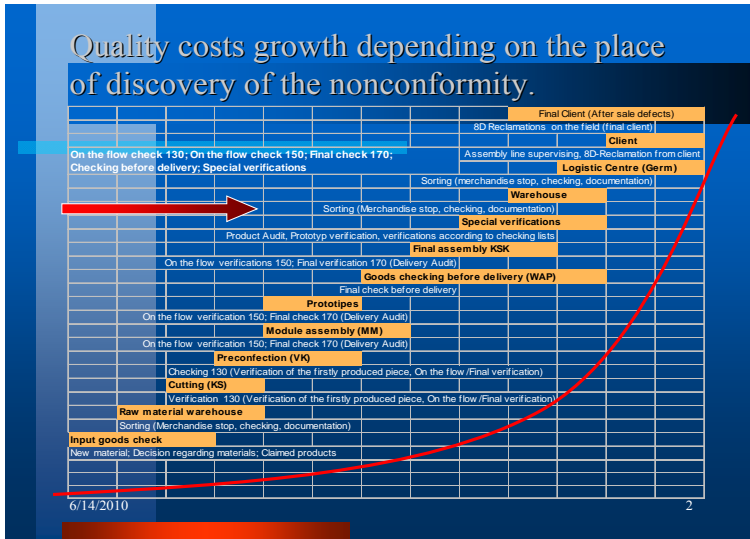
Fig.3 Increased costs depending on where quality nonconformities are discovered

Regarding human resources, personnel situation at the end of 2007, is as follows:

Lead persons   8   persons   (including   heads   of workshop)
Foremen   12
Team leaders   12
Clerks   10
Quality supervisors   111
Total staff   153

Control personnel were distributed on production departments and performed checks on the flow, revalidation of series from the production, and final checking before delivery (see fig.4).

Flow verification was performed according to a checking plan and a checking list, drawn on the characteristics claimed by the internal and external customers. According to the verification plan, flow checking were performed twice a shift. The documentation of errors was carried out on paper (card collection errors) and then was placed in a program with the help of which they could perform the necessary assessments (ppm, Pareto analysis, etc.).

Revalidation of series production (checking of the first piece produced) was done according to the following principle: "one module (cable) for each new

series of each production line from each shift. A measurement and a 100% verification of the product were carried out, according to the drawing plan, the checking list and the list with the claimed characteristics. After series release, the production continued the activity and final products were routed to the control area, where the final examination took place. A 100% checking was being done with two modules from each package. Before delivery, the Logistics department made available a list of products that were to be delivered. According to this list, the completed series that were to be delivered were verified at a rate of 2% of the series size.

Schematically, these processes of verification are presented in Fig. 4.

This verification system was implemented early in the DRM business activity. At that time, the production system was very good, allowing a production controlling, by successive checking of products, in various stages of completion. It is understood that a lot of mistakes or alleged errors were discovered, which were always subject to discussion between production and quality. Module construction process, a process almost entirely done by hand, had some interpretable qualitative features. Hence the large number of mistakes documented and daily discussions between the two compartments. It is the so called *"Schönheitsfehler[45]"*, beauty mistakes, that had a functional role and would not cause any assembly problems to the customer.

By the end of 2007, the problem of quality control efficiency and maintaining the effectiveness of controls was raised, with a 15% lesser staff. Maintaining quality control, basically avoiding the worsening of the 'ppm' indicator below the target set, would have been virtually impossible, if that verification system had been maintained.

The question that came by itself was: how can we quantify the QS activity? (QS comes from the German abbreviation *Qualitätssicherung*[46] = quality assurance).
Which could be the formulas for determining the effectiveness and efficiency of the verification process? How can data be interpreted?

Following discussions of the quality management department, have established the necessary steps to determine the calculation formula:

1. Setting the time period for the addition of errors documented for each verification process and within each main production process. Taken into consideration were the last 160 days (eight months).
2. Documenting daily life activities for two days of each quality worker, then their categorization within five main activities.
3. Internal assessment documented errors (sum of the internal evaluation system).

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[45] Schönheitsfehler = defective appearance, beauty mistakes
[46] Qualitätssicherung = quality assurance

4. Evaluation of errors from complaints (sum of QSYS RQMS[47]-assessment system errors recorded in complaints).
5. Determination of calculation formulas - defined translation efficiency and effectiveness (as stated in standard EN ISO 9000) in specific language quality control processes.
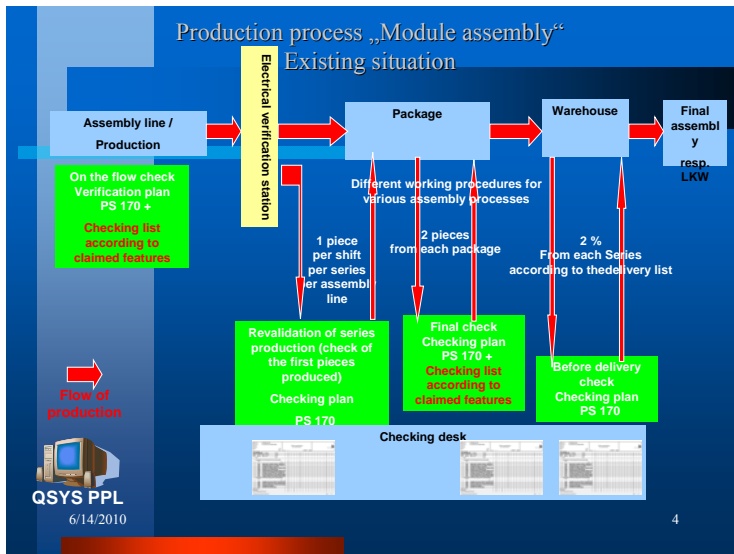
Fig. 4 – Verification process of production "module construction", 2007

Time spent with most common activities, in percentage, followed in the result as shown in the table below (table 1):

	On the flow verifications	Final verification	Sorting	Special verification Q-Gate	Administrative activities
DRM51 KS Cutting 130	89%	*	1%	*	10%
DRM51 VK Preconfection 130	75%	*	5%	10%	10%
DRM51 Module assembly	21%	46%	8%	12%	13%

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[47] QSYS RQMS = assessment system errors recorded in complaints, firma Dräxlmaier, Germany

DRM52 Engine block assembly	31%	18%	4%	38%	9%
DRM53 KSK Final assembly	20%	30%	20%	15%	15%

Table 1. Time spent with most common activities (in percentage)

Formulas were determined from the definitions of EN ISO 9000:
Effectiveness: the extent to which planned activities are realized and planned results are achieved (EN ISO 9000:2006).

- Effectiveness = measure to achieve the objective
- Effectiveness = the ratio of realized and the proposed target

The objective in this case: finding errors produced on a given production stage.

Be: = Sum ΣGf errors discovered on a particular stage of production (cutting, pre-confection, assembly, etc.)
and ΣGtf = Sum of all errors that come from a certain stage of production, irrespective of their discovery (cutting operation + pre-confection + internal customer + external customer), it then results in the effectiveness formula:

Eft = ΣGf / ΣGtf

Efficiency: relationship (ratio) between the result obtained and resources used. (EN ISO 9000:2006).

Be: = Sum ΣGf errors discovered on a particular stage of production (cutting, pre-confection, assembly, etc.) for a period of eight months;

T = actual time used to process control [hours]

T = NP * Pta * h * Nl * Cc

Where:
Np = number of people assigned for controlling the process; Pta = Share of time allocated [%]; h = number of hours worked daily; Nl = number of working days taken into account; Cc = coefficient of leave (medical, recreation);

Efficiency formula as follows:

$$Efc = \frac{\Sigma Gf}{T * Kef} \quad [\%]$$

Where:
Kef = coefficient of efficiency - efficiency ratio which means all verification activities, the ratio of total number of errors found and the total time used for their discovery;

Kef = ΣGt / Th, [errors / h]
Where:
ΣGt = sum of errors from all stages of completion, regardless of place of discovery, Th = total hours of verification.

That can cause two leading indicators in evaluating the quality.

First, **Efc**, indicating the effectiveness of detecting faults in the production processes (cutting, pre-confection, module assembly, final assembly) or quality (pre-confection verification process, checking the flow, final examination).

The second, **Kef**, indicates the productivity of detecting errors in general, the control processes (how many errors per hour are found by all checking staff).

4. Results and interpretation

Applying the formula for calculating the efficiency, the following results are obtained (see table 2):

Sweepstakes mistakes						
	Cutting	Pre-confection	Module assembly	Motor	Final assembly	Total
Process verification	141	3579	0	0	0	3720
Flow verification	5601	3928	3893	244	663	14329
Final assembly	66	209	23144	756	40	24305
Special checks	0	0	833	4565	0	5398
Sorting	13	61	1161	3157	2340	6732
External complaints	0	40	369	41	57	507
Internal complaints	4	7	344	5	110	470
Total	5825	7824	29744	8768	3210	55461
Effectiveness						

Process verification	2,42	45,74	0,00	0,00	0,00
Flow verification	96,22	50,29	13,09	2,78	20,65
Final check	1,13	2,67	77,81	8,62	1,25
Special checks	0,00	0,00	2,80	52,06	0,00
Sorting	0,22	0,78	3,90	36,01	72,90
QS effectiveness on production processes	100,00	99,49	97,60	99,48	94,80	Effectiveness QS: 98,77

Blue marking shows the relevance of checking for a particular production process

Table 2. QS effectiveness on production processes

The above table leads to the following conclusions:
The Cutting process
On cable cutting process, the effectiveness of detecting errors is low.
Errors produced by the sectioning department, are entirely found in the company. Hence the 100% QS efficiency at the cable cutting process.

The pre-confection process
Nearly half of the discovered mistakes are found in pre-confection, the rest in the following processes, including the internal and external customers. In this case, errors are claimed. Average efficiency of discovering errors during the process.

Module assembly process
High efficiency of the final assessment, compared with flow checks.
Most errors are found on products in the final assessment. This causes additional costs of reprocessing default or repair.

Module assembly process for the engine block
Low efficiency in detecting errors in flow controls and final assessment.
Most errors are found in additional filter Q-Gate [48]= Quality Gate "introduced as a result of the number of errors claimed by the customer. Checks are made by quality staff.
High costs of rework or repair.
Focused on staff as additional filter.

The final assembly

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[48] Q-Gate = Quality Gate

Relatively low efficiency and very low flow verification to final checking.
High efficiency when sorting. QS staff is focused on sorting the finished products as reinforcement of internal and external customer complaints. In this process, there are also sorting actions, following the detection of errors in previous processes.
Most important errors however, are found in company products, ultimately resulting in a high efficiency of 98.77%.
Important is to judge, but with what material efforts are these mistakes discovered? What can be done so as to find most mistakes in initial trials?
To answer these questions, we shall apply the efficiency formula for each process separately.
First, calculate the coefficient of efficiency:

Table 3. Coefficient of efficiency

Total hours of examination	157440	
Hours and medical leave	23616	
Total actual hours verification	133824	
Kefic.	0,32	Errors per hour

Then, the QS efficiency in production processes and then, the effectiveness of quality processes (table 4)

Table 4. The QS efficiency in production processes and then, the effectiveness of quality processes

Checking type	Cutting	Pre-confection	Module assembly	Motor	Final assembly	Total
Verification pre-confection process	141	3579	0	0	0	3720
Flow check	5601	3928	3893	244	663	14329
Final check	66	209	23144	756	40	24305
Total	5808	7716	27037	1000	703	42354
QS efficiency in production processes						
Process	Number of persons	Share of time allocated	T*Kef		Efficiency	
Cutting	6	0,89	1838,783415	0,0767	8%	
Pre-confection	9	0,75	2324,304878	1,5398	154%	

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Module assembly verification flow	76	0,21	5495,689756	0,7084	71%
Final check in module assembly	76	0,46	12038,17756	1,9226	192%
Motor flow check	18	0,31	1921,425366	0,1270	13%
Final motor check	18	0,18	1115,666341	0,6776	68%
Final assembly flow check	23	0,2	1583,970732	0,4186	42%
Final check of final assembly	23	0,3	2375,956098	0,0168	2%
Efficiency of quality processes					
Process	Number of persons	Share of alocated time (medium value)	T*Kef		Efficiency
VK verification process	15	0,75	3752,783918	0,9913	99%
Flow verification	117	0,24	9366,948659	1,5297	153%
Final verification	119	0,435	17267,80973	1,4075	141%

The above table leads to the following conclusions:

The effectiveness of QS on production processes
Very low QS efficiency on the cutting process. Taking into account the detection efficiency of 100% in the company, of errors caused by cutting compartment, it can be concluded that it is necessary to allocate human resources to verify the production of cutting. The six people can be redeployed where necessary or to apply a reduction of staff through natural fluctuation.

In the case of pre-confection process, there is a high efficiency, which justifies the allocation of resources to the production process. In the case of modules and engine assembly process, there is a high efficiency of the final assessment compared with the controls on the flow. This explains the high efficiency of the final assessment compared to those on the production flow.

This is not consistent with the principles required to start the project, to find faults produced as close to original production processes, so the cost of

repair, rework was minimized. In the case of final assembly process, the allocation of resources and high volume work flow verification is confirmed.

The effectiveness of quality processes
Quality processes generally have a high efficiency in all areas, which explains the high efficiency and total activity calculated on the QS. This however, shows that a large number of people participating in these type of checking, are necessary, to ensure that the balance between efficiency checks and final flow, tilts more in favour of the former. That in terms of staff reductions of 15% and maintaining a quality level of production within the targets.

5. Ongoing project QVP (*Qualitätsvorausplanung*[49] = quality planning)

It was clear for the entire managerial staff of the department that an organizational actions was required, that eventually would have led to a quality control activity in concordance with the principles described in "the rule of 10". Meaning that errors have to be discovered as close to their place of production as possible.

This was necessary to establish a new cost centre in the quality department, called Plan-QVP quality. The person responsible of this cost centre, for this new activity, has the task to guide the management team of the department in implementing the new concept of verification. To this end, together with the Competence Quality Centre, which provides technical support and necessary schooling for all staff involved, main time frames have been established for this project (fig. 5).

Fig. 5 – Ongoing project „Quality planning(QVP)"

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[49] Qualitätsvorausplanung = quality planning

A. *Phase 1 - Analysis, planning, training*

In this phase have been established the following activities:
a)   A review of quality for the first half of 2007;
b)   Review the work instructions in the quality department activity;
c)   Identifying opportunities for improvement, based on efficiency and effectiveness calculation of processes;
d)   Develop new planning approach to quality;
e)   Introducing the concept and subject to the approval of the General Director;
f)   Informing the heads of departments about the approved changes;
g)   Schooling QVP Officer;

Early stages of the project (points a, b, c) have been described, mainly in previous chapters of this work. The developing of the new concept of quality has been planning a joint activity between the Competence Quality Center and management team of the department of Quality DRM. The former have been busy creating technical support, tools and procedures to enable implementation of the concept and the DRM team has dealt with the allocation of resources, department reorganization and progressive implementation of the project. It is worth mentioning the fact that this new planning system in the quality segment was first implemented by Draexlmaier Electric Corporation, at DRM Satu Mare.

The new system of quality inspection, as a result of project implementation, shows schematically on the map, module assembly processes, which have shown implemented desired situations. (fig.6).
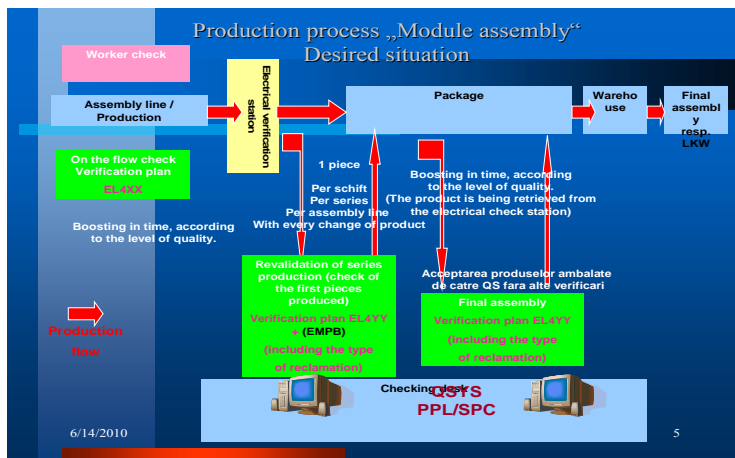

Fig.6 – Control of the production process „building modules" desired situation

This process model was used for the pilot phase of the project implementation. Subsequently, the process models were made available for each production process in part (cutting, pre-confection, module assembly, final assembly), respectively for each customer (DaimlerChrysler, Porsche, etc.). This new type of process has the following advantages:

- Decentralization of planning checks, to create verification plan changing in real time as needed;
- Production checks are ensured by the "unpredictable" principle, according to more dynamic checks for the QSYS program. For the production, the product to be verified is not predictable. In the past, the sample was brought at quality checking by the production - risk 'preparation' of a product without mistakes;
- Employment verification staff will have a high efficacy and efficiency and will focus on problematic products (it will decrease viewpoint, stable products quality checks, and default and lower coefficient of detecting errors, Kef)
- Verification directed (by actual errors) after checking indications contained in the control plans (PPL)
- 100% reduction in checks by measurement modules (time savings, without increasing the risk of further transmission of non-conforming products);
- Reducing the risk of product failure as a result of successive manipulations necessary controls;
- Reduce documentation on paper - as documented controller errors QSYS SPC[50] program product directly, without using paper (available for all checks, less verification flow that runs on the manufacturing line);
- Verifying the implementation of preventive activities by workers as a "worker verification plan".

At that time, responsibilities and organizational measures necessary to ensure that the new system can be implemented, have been settled:

Situation in 2007:	Responsibility
Drawing up verification plans	Person 1
Checking command generation	Person 2
Complaint Processing	Person 3
Ratings	Person 4
Introduction of nonconformities in SPC:	Different people

Compared with this, following the implementation of the new concept of quality planning situation became as follows:

Situation in 2009:	Responsability
Drawing verification plans	Head shop
Generation verification command	Head shop
Complaint Processing	Head shop

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[50] SPC = Statistical Process Control

Ratings	Head shop
Tasks regarding worker verification	Head shop
Introduction nonconformities in SPC:	Quality
supervisor	
(Including worker verification)	

Workshop leader takes responsibility for:
- Preparing and updating the verification plan, which boosting, will be on the basis of the quality of each product;
- Updating of verification according to complaints (internal and external), if applicable, verification generating commands;
- Correctly introduce SPC verification results;
In this way, the workshop leader has a task manager which manages the resources of dynamic checks for verification.

B. Phase 2 – Implementing Pilot Phase

Pilot phase of the project was implemented successively in the production of modules for cables of the new E-Class model and then to engine block wiring assembly process (collectively, engine modules). Pilot phase was home in the early 2008 and lasted until September of the same year.

The main activities during the implementation of the pilot phase were:

- Creating a parallel system of work in QSYS SPC to allow the necessary training, without disturbing the work of acting. In this way, switching from one system to another was carried out gradually, without affecting the quality of work in the QS.
- Check operation of the new system. It's approval.
- Training of Heads of workshop topics:
- Making models succession processes under production flow;
- Making verification plan
- Foundations of statistical techniques;
- SPC QSYS program operation, the connections between different modules of the program;
- QSYS-connection control plan (PPL)
- Drawing up and modification control plans;
- Clarification of definitions concerning the control plan, (by product, or plan check items).
- Introduction of photographs in control plans;
- Preparation of commands for checking;
- Verification and final verification flow using QSYS SPC;
- Measurement sheet
- Catalogs with causes and measures;

- QSYS using evaluation modules, EVA and NamedSQL[51] module.
 - Schooling quality workers with the following themes:
- Basic operation of the program QSYS;
- Verification and final verification flow using QSYS SPC;
- QSYS using evaluation modules, EVA module.

C. Phase 3 – General Implementation

Simultaneously, as an implementation and evaluation result, they started to implement the project in other areas of production of cables (Porsche S-Class, Maybach, and the old E-Class) to conclude in May 2009 the implementation for modular assembly processes and final assembly.
Schooling activities conducted during the 3rd phase are identical to those of the pilot phase of the project QVP.

6. Analysis of efficiency and effectiveness at the end of project implementation and beyond.

From January 2009, a new concept of quality can be taken into consideration. Planning has been implemented in full, leaving some points open for projects such as new product, Porsche.

As a result, the last monthly indicators to track effectiveness and efficiency.

Here are the results of 2009 (table 5):

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[51] EVA and NamedSQL evaluation modules in QSYS, for determining the quality level, in the Dräxlmaier Company, Germany

	2009.01	2009.02	2009.03	2009.04	2009.05	2009.06	2009.07	2009.08	2009.09	2009.10	2009.11	2009.12
Eft1	96,20	93,63	95,36	90,05	98,95	99,51	93,75	87,38	98,42	85,82	92,41	99,38
Eft KS	100,00	98,59	100,00	100,00	100,00	100,00	97,22	100,00	99,80	100,00	100,00	100,00
Eft VK	45,28	96,09	100,00	100,00	99,67	99,73	99,52	99,79	98,91	79,63	98,07	100,00
Eft DAG212	100,00	99,08	100,00	61,24	100,00	100,00	94,14	100,00	98,51	99,39	93,96	99,38
Eft DAG221	99,11	73,17	73,10	100,00	95,25	97,82	72,04	99,10	97,35	76,53	91,58	98,35
Eft DAGMot	99,41	88,84	94,35	98,68	100,00	98,32	98,35	99,89	97,10	85,85	96,88	98,50
Eft Porsche	77,78	82,52	58,43	26,67	72,12	49,17	63,78	44,61	80,10	87,77	61,32	81,34
Target	85,00	85,00	85,00	85,00	85,00	85,00	85,00	85,00	85,00	85,00	85,00	85,00
Eft2	91,09	91,34	87,70	75,02	97,73	92,40	88,11	84,06	97,68	83,22	84,76	98,62
Eft v. process	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	6,62	16,36
Eft v. flow	13,78	24,96	22,80	34,63	46,41	33,93	31,05	34,09	44,30	34,16	33,21	64,29
Eft v. final	33,49	19,19	27,25	19,22	20,95	13,03	19,42	11,58	13,22	14,03	12,13	10,72
Eft v. special	0,00	0,00	0,00	0,07	0,00	0,00	0,00	0,03	0,00	0,00	0,00	0,00
Eft Sorting	43,82	47,20	37,65	21,09	30,36	45,44	37,65	38,35	40,16	35,02	32,81	7,25
Kefic	0,04	0,04	0,04	0,06	0,13	0,14	0,08	0,11	0,21	0,16	0,21	0,35
Efc v. process											101%	141%
Efc v. flow	68%	129%	96%	133%	137%	153%	129%	154%	161%	145%	132%	144%
Efc v. final	294%	177%	205%	131%	110%	104%	143%	93%	86%	106%	86%	43%

Table 5. Effectiveness and efficiency – results of 2009

Two indicators are highlighted in table efficacy: Eft1, measure the effectiveness of production and Eft2 effectiveness of quality checks.

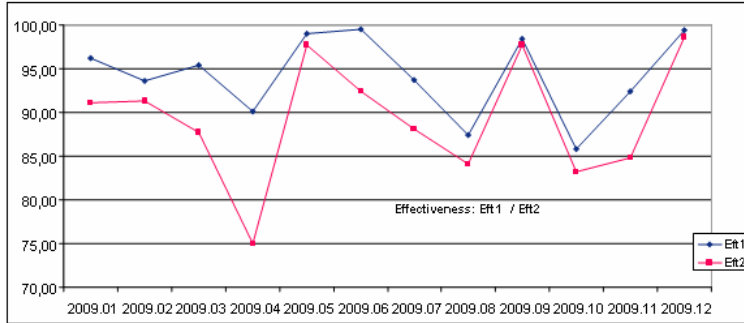Evolution over time is represented in the chart below (fig.7).

Fig7. Development of effectiveness indicators

Eft2 indicator, which measures the effectiveness of quality checks (the process, the stream and manufacturing) has a similar trend Eft1, with significant decreases in April, August and October due to fluctuating demand.

Going forward with the analysis of the effectiveness, QS efficiency reported production processes, is described as follows:
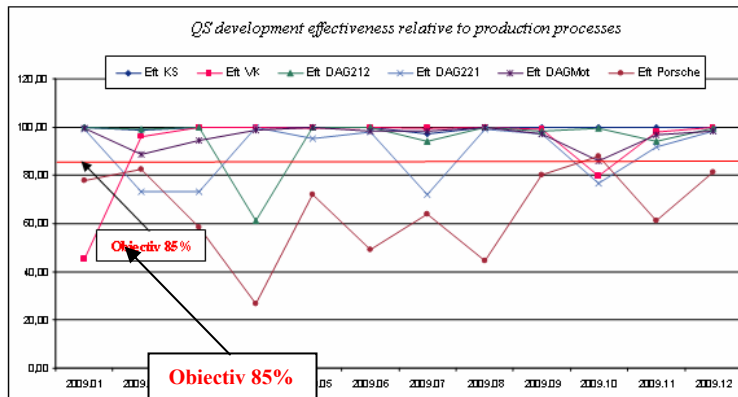

Fig.8 QS development effectiveness relative to production processes

Effectiveness objective set for 2009 was 85%. High efficiency is observed at the QS, for-the goal for process / product number. In the Porsche customer

owned products, efficiency is low, which is understandable, due to the implementation of new processes and manufacturing of a new concept.

The result was above our expectations. This high efficiency, around 95%, does not show significant changes relative to QS processes and products made in 2009, compared to the first evaluation of the end of 2007 (98.77%). As a result, the 2010 has set a target of 96% for QS effectiveness relative to manufacturing processes.

It is interesting to watch how effectiveness of the quality workers evolved. In Fig. 9 a positive trend of effectiveness can be observed, by checks on the flow (Eft Laufprüfung[52]), compared to the final examinations (Eft Endprüfung[53]), which has a downward trend.
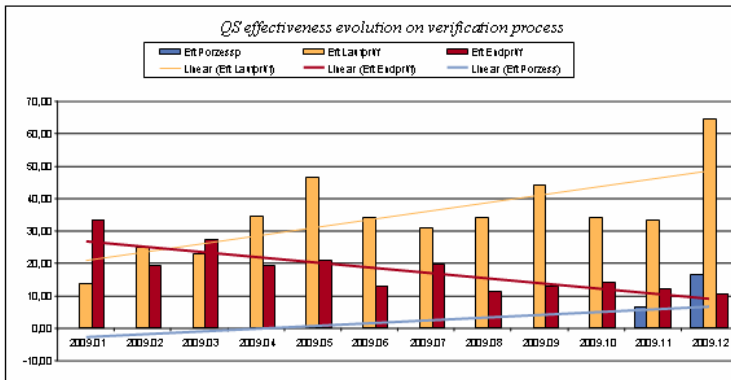

Fig.9 QS effectiveness evolution on verification process

This is in line with the principle on which implementing the new planning approach to quality began. The finding of mistakes in the early stages of production as close as possible to their place of production was a priority.

Efficiency indicators have a similar development during 2009. Kefic efficiency coefficient was increasing throughout the year, which is understandable in that, during the year, quality workers have gained experience and routines necessary for the number of errors per unit time to grow month after month, reaching values similar to 2007.

As noted above, the startup project efficiency coefficient value was 0.32 errors per hour. In late 2009, the efficiency ratio reached a value of 0.35 mistakes per hour. (fig.10).

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[52] Eft *Laufprüfung* = effectiveness by checks on the flow (German language)
[53] Eft *Endprüfung*= effectiveness by the final examinations (German language)

In a stable production and quality control system, stabilized coefficient of efficiency would be to have stable values. A definite increase in its quality level means a worsening of all the production levels. In 2009, this growth factor is explained by the fact that at the beginning of the new planning system, quality began to work with certain difficulties related to the beginning. Quality control staff had to get used to working with a new system (QSYS SPC) and to replace paper with computers. Intellectual effort and training needs throughout the year led to the discovery of QS by a smaller number of errors per unit time. The situation has improved every month, reaching the end of acceptable values.

The following question was posed: what happened with the ppm value indicator which measures the quality of delivery, can it be raised? How to offset the lack of experience of quality workers in early stages of the project, so as to remain within the ppm target values?

This decrease in the number of errors detected by the quality worker has been foreseen. Therefore, in agreement with the production management department, it has been decided to set up additional filters to control the production of personal belonging, but coordinated by the QS. The staff of these filters was intended to check 100% certain critical features of products, features often claimed by the customer as being true. This has led to the level of quality of each product and therefore the starting point of drawing up plans for further scrutiny.
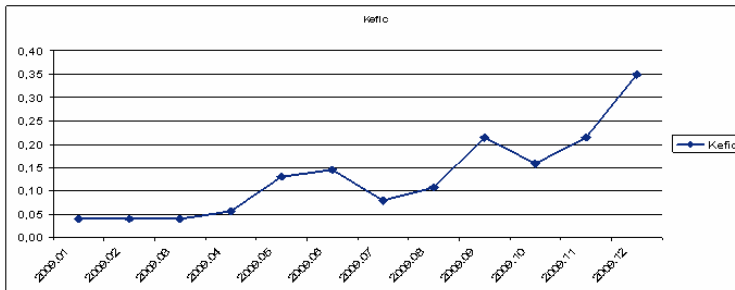

Fig.10 – Efficiency coefficient evolution in 2009

At the end of efficiency analysis, indicators can be seen that effective checks on flow have a positive trend compared to that of the final assessment. The same may be observed with analysis of process of efficiency in the pre-confection department.

Analysis of the latter was begun only in the last two months of 2009, when the concept of quality planning has been extended to processes in the pre-confection (fig.11).
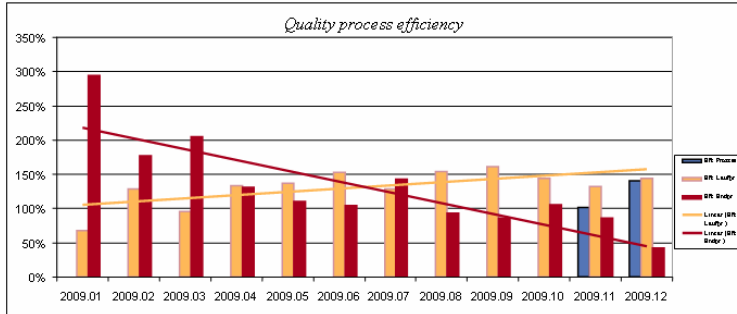

Fig.11- Quality process efficiency

This again leads us to conclude that the lead project, implemented in addition to increasing the effectiveness, also the efficiency of the verification process flow´, compared with the final verification.

Quality of material and human resources directed towards initial production processes have led, as desired, to tilt the balance between process efficiency and flow control and final control towards growth of the two indicators for the purposes of verification process flow manufacturing.

7. Conclusions

QVP Following project implementation, the share of time allocated to various activities as has been amended as follows (table 6):

	Flow verifications 2007/2009	Final verifications 2007/2009	Sortings 2007/2009	Special checkings 2007/2009	Administrative activities 2007/2009
DRM51 KS Cutting 130	89% / 0%	*	1% / 1%	*	10% / 0%
DRM51 VK Preconfection 130	75% / 72%	*	5% / 1%	10% / 21%	10% / 6%
DRM51 Module assembly	21% / 41%	46% / 36%	8% / 8%	12% / 9%	13% / 6%

DRM52 Engine block assembly	31% / 66%	18% / 19%	4% / 3%	38% / 5%	9% / 7%
DRM53 KSK Final assembly	20% / 44%	30% / 30%	20% / 10%	15% / 10%	15% / 6%

Table 6. The share of time allocated to various activities

In general, the share allocated checks flow increased in 2009 compared to 2007, when talking about module assembly processes. Share of time allocated to the final assessment has remained relatively constant, significant changes missing. Share of time allocated to specific sorting and verification decreased, precisely because of the accountability of production to quality, additional filters belonging in 2009 to the department of production and not to quality. Something gratifying in terms of QS activity is to reduce bureaucracy. In all areas a decrease of time allocated to administrative activities is observed.

I made a comparison between the values of effectiveness and efficiency as the main processes, although results were only informative about the data being collected as a result of the operation of two completely different control systems (Fig.12).

One may observe an increase of effectiveness and efficiency in 2009 compared to 2007, in the pre-confection processes. In the case of module assembly verifications, there is an increase in the share of time allocated to flow checks, compared to that of the final assessment. As a reinforcement of this, there is an increase of effectiveness for both types of verifications as well as increase the efficiency gap between flow checks compared to the final assessment. These observations made by comparing the last eight months of the years 2007 and 2009 are consistent with trends observed throughout the year 2009. Aim to find more mistakes early in the process of production has been reached.

Finally, indicators for assessing effectiveness and efficiency of quality control processes provide:
- Data on the share of time allocated to different specific activities of the QS;
- Information on how inspections are carried out and how effective they are;
- Data about the quality of production;
- Information about possible risks of worsening indicators of quality assessment and production costs of non-quality (ppm and CNQ[54])
- On which stages of production are errors detected?
- Where should be allocated the human resources so that possible errors are detected on production processes with high risks?

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[54] CNQ = costs of nonquality

- How should checks be dynamised, so that any errors detected be remedied at minimal costs?

At the end of 2009, the Quality department managed by action taken, also a 15% reduction in staff. Comparative data plan, are presented in Fig. 13.
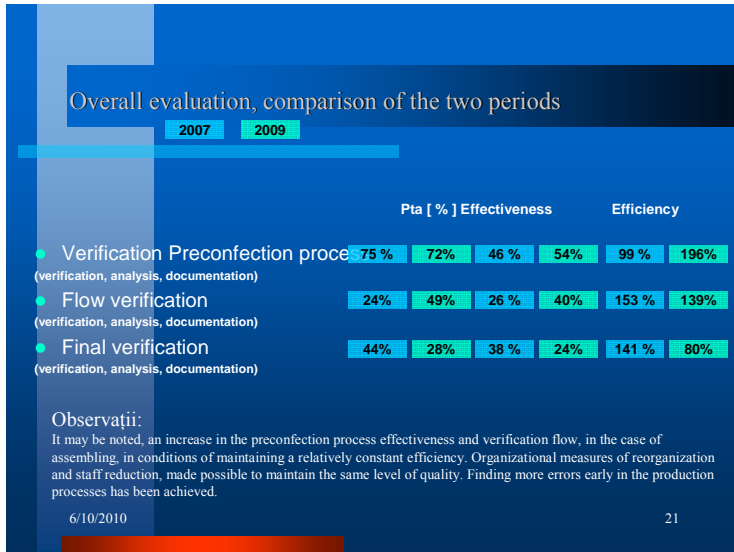

Fig. 12 – Values determined by calculating the efficiency and effectiveness compared to between 2007 and 2009

	2007	2010
DRM5	2 Persons	3 Persons
DRM50	13 Persons	14 Persons
DRM51	84 Persons	31 Persons
DRM52	23 Persons	33 Persons
DRM53	31 Persons	33 Persons
DRM54	0 Persons	1 Persons
DRM55	0 Persons	15 Persons
TOTAL STAFF	153 Persons	130 Persons

Fig 13 – Distribution of quality personnel department, cost centers compared, December 2007-December 2009

This has largely contributed to the efficiency of control in general.

8. Another approach to efficiency. Effectiveness as an economy

From this point of view, we define efficiency as the relationship between inputs and outputs, performance and costs and / or other disadvantages or losses.

Professor Peter Drucker[55] notes that "although efficiency is very important, from the wrong things done efficiently remains the loss" (Drucker, 2007).

Efficiency problem is to answer the question: "do we do things right, correct?, unlike that of effectiveness: do we do the things needed?[56]"

A famous quote of professor Drucker on efficiency sounds like: "Efficiency is doing better what is already being done.[57]"

In the following we treat not only efficiency and cost performance, as was treated in previous chapters of the work, but also as a link between planed human resources and real human resources, necessary for quality control process. Following this idea, efficiency is defined by a relationship between outputs and inputs used or allocated.

In this sense, the question is, first, to establish an optimal ratio between quality human resources allocated to those allocated for production and secondly to determine the efficiency as the ratio of human resources planning and existing.

The average yield of staff is being defined (ratio of number of personnel quality-Production = ω) as monthly average quality of staff by the average monthly production staff.

ω = NP QS / NP Prod

Where: NP QS = Number of personnel engaged in quality
       Prod NP = Number of personnel engaged in production

Optimal value of this report is considered as the objective of efficiency (100%) the share of quality personnel to its employees in production. Optimal value of the ratio of specific activity was determined according to the production of automotive electrical wiring. Given the high percentage of manual processes, the optimal ratio is considered to be in the range 4% - 5%, with the possibility to be amended annually, depending on the stability of production or the introduction of projects / new products that need 100% verification of the quality. In 2007 for example, there were expected significant fluctuations in production, and hence the levels of staff.

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[55] Peter Ferdinand Drucker (1909 -2005) Austrian writer and teacher, management consultant
[56] Peter Drucker quotes [online]. Available from: http://thinkexist.com/quotation/efficiency_is_doing_things_right-effectiveness_is/218648.html [Accessed 24th June 2010]
[57] Peter Drucker quotes [online]. Available from: http://thinkexist.com/quotation/efficiency_is_doing_better_what_is_already_being/321906.html [Accessed 24th June 2010]

As such, the QS 2007 budget planned an average of 148 employees, which represented a rate of 3.95% of the production staff. In the years 2008, 2009, cable production was expanded by the acquisition of two major projects, one being related to a new client (and therefore other claims) involving an increase of QS staff. In 2009 the number of Quality employees was budgeted at 156 people, representing a rate of 4.53% compared to production staff. For 2010, were budgeted a total of 133 people, QS representing a percentage of about 4.5% of the production staff.

Based on these values, their achievement represents a 100% efficiency, we wanted to continue its growth by controlling staff turnover QS parallel transition to the new quality system planning so that the objective of 100% do not affect the quality of products, agreed with customers. In table 7, 8, 9 are the planned values and also the realized values (monthly and annually average) of average yield staff ω, for reference years 2007, 2009 and 2010.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Medium plan objevtive
NP planned prod.	4,383 MA	4,179 MA	3,977 MA	3,763 MA	3,568 MA	3,512 MA	3,495 MA	3,495 MA	3,575 MA	3,620 MA	3,620 MA	3,620 MA	44,807 MA	3,734 MA
NPQS plan	167 MA	165 MA	155 MA	153 MA	143 MA	141 MA	141 MA	141 MA	141 MA	141 MA	141 MA	141 MA	1,770 MA	148 MA
ω plan [%]	3.81	3.95	3.90	4.07	4.01	4.01	4.03	4.03	3.94	3.90	3.90	3.90	3.95	3.95

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Monthly average
NP real prod.	4,384 MA	4,222 MA	4,067 MA	3,938 MA	3,890 MA	3,822 MA	3,822 MA	3,799 MA	3,713 MA	3,776 MA	3,821 MA	3,805 MA	47,059 MA	3,922 MA
NP QS real	168 MA	164 MA	160 MA	160 MA	159 MA	158 MA	154 MA	153 MA	146 MA	148 MA	151 MA	151 MA	1,872 MA	156 MA
ωreal [%]	3.83	3.88	3.93	4.06	4.09	4.13	4.03	4.03	3.93	3.92	3.95	3.97	3.98	3.98

Table 7 - Average Yield planned staff-made, 2007

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Medium plan objevtive
NP planned prod.	2,793 MA	3,107 MA	3,154 MA	3,393 MA	3,492 MA	3,515 MA	3,499 MA	3,516 MA	3,733 MA	3,707 MA	3,707 MA	3,679 MA	41,295 MA	3,441 MA
NPQS plan	158 MA	158 MA	156 MA	156 MA	156 MA	156 MA	156 MA	156 MA	156 MA	156 MA	156 MA	156 MA	1,876 MA	156 MA
ωplan [%]	5.66	5.09	4.95	4.60	4.47	4.44	4.46	4.44	4.18	4.21	4.21	4.24		4.53

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Monthly average
NP real prod.	3,168 MA	3,085 MA	3,028 MA	2,910 MA	2,786 MA	2,779 MA	3,006 MA	3,140 MA	3,138 MA	3,104 MA	3,173 MA	3,170 MA	36,487 MA	3,040 MA
NP QS real	142 MA	140 MA	133 MA	131 MA	128 MA	133 MA	132 MA	131 MA	132 MA	130 MA	131 MA	130 MA	1,593 MA	132 MA
ωreal [%]	4.48	4.54	4.39	4.50	4.59	4.79	4.39	4.17	4.21	4.19	4.13	4.10		4.34

Table 8 - Average Yield planned staff-made, 2009

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Medium plan objevtive
NP Prod planif	2,982 MA	2,982 MA	2,919 MA	2,919 MA	2,928 MA	2,928 MA	2,928 MA	2,905 MA	2,958 MA	2,978 MA	3,030 MA	3,030 MA	35,487 MA	2,957 MA
NPQS plan	133 MA	133 MA	133 MA	133 MA	133 MA	133 MA	133 MA	133 MA	133 MA	133 MA	133 MA	133 MA	1,596 MA	133 MA
ωplan [%]	4.46	4.46	4.56	4.56	4.54	4.54	4.54	4.58	4.50	4.47	4.39	4.39		4.50

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Monthly average
NP real prod.	3,355 MA	3,351 MA	3,324 MA	3,273 MA	0 MA	0 MA	0 MA	0 MA	0 MA	0 MA	0 MA	0 MA	13,303 MA	1,109 MA
NP QS real	130 MA	129 MA	129 MA	131 MA	0 MA	0 MA	0 MA	0 MA	0 MA	0 MA	0 MA	0 MA	519 MA	43 MA
ωreal [%]	3.87	3.85	3.88	4.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		3.90

Table 9 - Average Yield planned staff-realised, 2010

This indicator used to assess the effectiveness relative to the number of employees.

It is calculated as: **EficN = average ωplan * 100 / month ωreal [%]**

Where:
Efic N = QS efficiency relative to the number of employees in manufacturing.
average ωplan = average ω planned efficiency, calculated as the ratio between the average monthly quality staff and average monthly production staff.
month ωreal = the monthly return, calculated as the monthly ratio between the number of personnel employed in the QS and the number of personnel engaged in production.

In fig. 14, 15, 16, is represented the evolution of efficiency relative to the number of employees. Values are given as a percentage and basically represent, the percentage of staff achieving efficiency in a given month, compared to average yield of staff planned.

Month	Jan.	Febr.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec,
Efic N	103.08	101.70	100.41	97.23	96.65	95.56	98.04	98.09	100.46	100.79	99.96	100.46
Objective	100	100	100	100	100	100	100	100	100	100	100	100

Ef N annual average: 99.37%
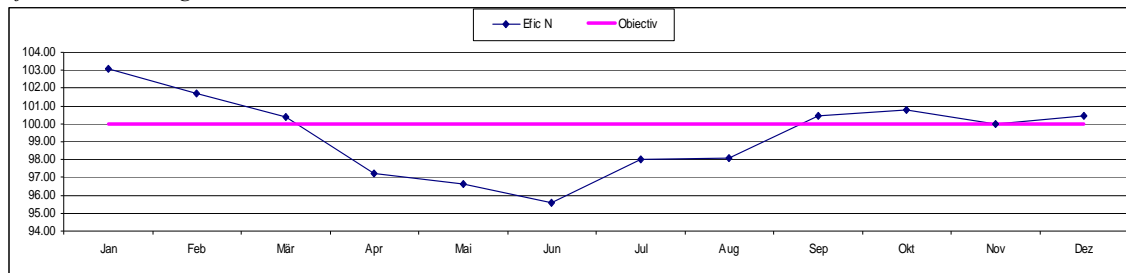
Fig. 14 - Developments in 2007 N ef

Month	Jan.	Febr.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec,
Efic N	101.13	99.89	103.21	100.70	98.67	94.72	103.23	108.66	107.77	108.24	109.80	90.47
Objective	100	100	100	100	100	100	100	100	100	100	100	100

Ef N annual average: 102.21%
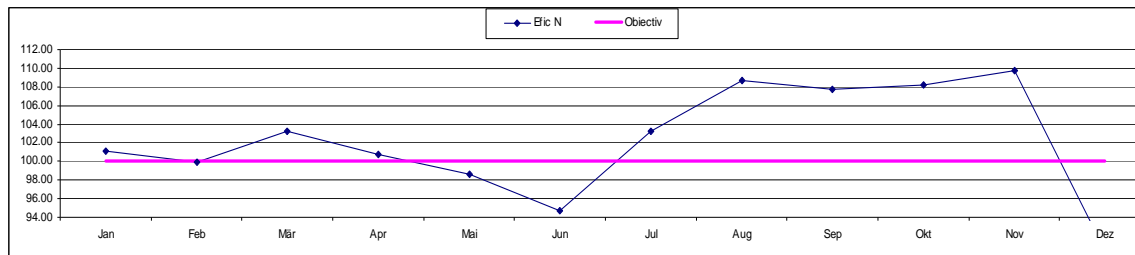
Fig. 15 - Developments during 2009 N ef

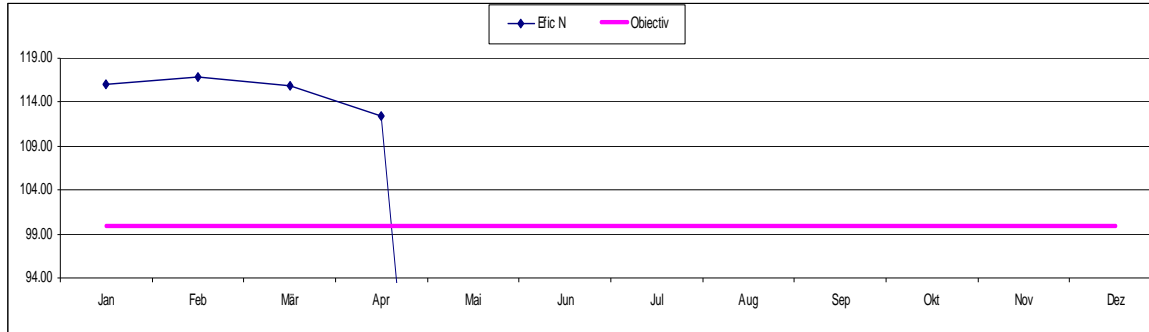| Month	Jan.	Febr.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec,
Efic N	116.07	116.83	115.89	112.37	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Objective	100	100	100	100	100	100	100	100	100	100	100	100

Fig. 16 - Developments during 2010 N ef

Based on data provided by the Controlling dept., according to the monthly review expenditure, a reported effectiveness in personnel costs in the QS department can be calculated.

To this end, the following formula:

Efic C = CP QS plan / CP QS real

Where: **Ef C** = efficiency relative to personnel costs
      PA plan QS = QS Staff costs planned
      PA Real QS = QS personnel expenses, incurred in a particular month / period

In fig. 17, 18, 19 is presented the evolution of this indicator during the years 2007, 2009 and 2010.

Month	Jan.	Febr.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec,	Month
CP QS plan	211,239	209,313	200,875	199,180	190,512	188,817	188,524	188,231	187,938	187,645	187,352	187,059	2,326,683
CP QS real	206,700	213,047	253,813	254,795	278,714	256,813	261,542	253,396	242,334	257,765	230,656	208,884	2,918,459
Efic C	102.20	98.25	79.14	78.17	68.35	73.52	72.08	74.28	77.55	72.80	81.23	89.55	79.72

Ef C annual average: 79.72%
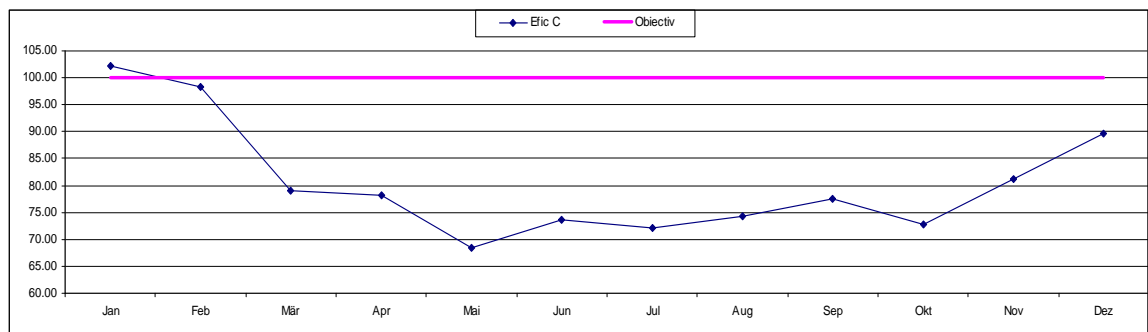
Fig. 17 - Evolution of Efficiency on staff, 2007

Month	Jan.	Febr.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec,	Anual value
CP QS plan	301460	301460	301460	301460	301460	301460	301460	301460	301460	301460	301460	301460	3617520
CP QS real	269656	269153	308382	264330	277880.25	277880.25	277880.25	277880.25	277880.25	277880.25	277880.25	277880.25	3334563
Efic C	111.79	112.00	97.76	114.05	108.49	108.49	108.49	108.49	108.49	108.49	108.49	108.49	108.49

Ef C annual average: 108.49%
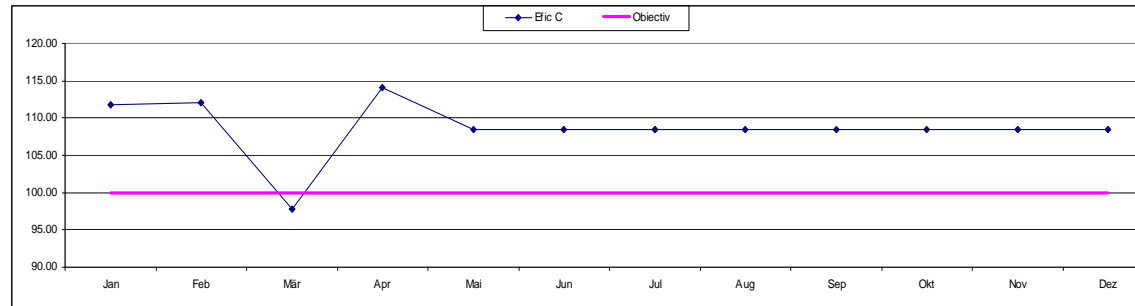
Fig. 18 - Evolution of Efficiency on staff expenditure, 2009

Month	Jan.	Febr.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec,	Anual value
CP QS plan	257,265	257,265	257,265	275,904	275,904	275,904	275,904	275,904	275,904	275,904	275,904	275,904	3,254,934
CP QS real	269,656	269,153	308,382	264,330									1,111,521
Efic C	95.40	95.58	83.42	104.38	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	292.84

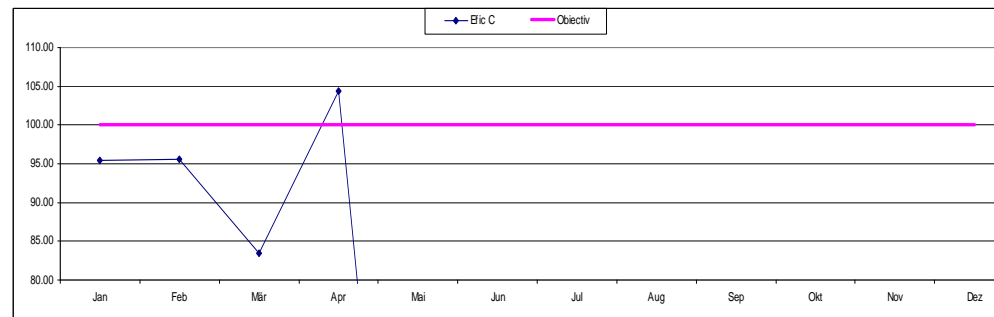*Ef C annual average will be calculated at the end of the year*

Fig. 19 Evolution of Efficiency on staff expenditure, 2010

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The data analysis presented above, leads to the following conclusions concerning the effectiveness of Quality department:

In 2007, efficiency reported to the number of employees was below the target of 100% due to staff supplementation ehich began in March. Staff supplementation was based on the new hired staff tuition plan, designed for carrying out new projects. The same significant increase may be observed by the Production department. In the QS department, staff that did not meet requirements, were gradually redeployed in production after test periods.

An optimum number of personnel, properly trained and able to participate in developing new projects, was reached by the end of 2007. However, staff efficiency was achieved at a lower point than planned, due to inefficiency of control, which required a larger number of quality personnel. In 2008, based on the accumulated experience during the course of planning the new quality system, the budget plan was to reach an average of 156 employees for the QS department.

On the other hand, the last months of 2008 have shown that a permanent reduction of staff could be achieved, a reduction that was maintained throughout the entire year of 2009, leading to an increased efficiency indicator (ef N = 102.21%). This tendency is also maintained in 2010, realizing monthly values of over 110%.

In terms of efficiency relative to staff expenditure, the year 2007 shows a low efficiency due to maintaining a staff above the planned level. In 2009, the situation changes radically, the massive reduction of staff leading in December to greater efficiency of Ef C up to 108.49%.

In 2010, although the number of staff is lower than planned, in the first three months a decrease in efficiency in personnel costs is observed, below the 100%. This is because, on the one hand, salary raises and the prizes awarded,

but also overtime in the first quarter due to an increase of production minutes (controls) significantly above planned levels.

As above illustrated, these two efficiency indicators allow Quality departments to dimension their quality staff, according the fluctuations in production personnel, but at the same time keep within the budgeted expenditure. This however is possible only by optimizing control processes and by implementing new methods of quality planning, which do not allow low quality level of production, as a result of fewer staff. The size of Quality and Logistics departments have a negative impact on production efficiency gains, just by distributing products based on the minutes and staff from the departments above mentioned.

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Firm innovation and role of geography and clusters in Bosnia-Herzegovina - firm level insights

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Purpose: Some researchers and policy makers (Porter, 1998, 2000, 2003, Baptista and Swann, 1998, Belussi 2004, Ketels and Orvell, 2007, Ketels 2003, Maskell 1999, 2000, Malmberg and Maskell 2005, EU 2006, OECD) have argued that there is a strong link between economic growth and clusters. Their argument is that since clustering allows firms to experience higher total factor productivity growth than otherwise, the existence of a cluster allows a region or a country to have faster economic growth than it would otherwise have in absence of clusters. Literature groups cluster effects as: (a) increasing the current (static) productivity of constituent firms (b) increasing the capacity of cluster participants for innovation through knowledge spillovers and (c) stimulating new business formation that supports innovation and expands the cluster. Literature suggest that knowledge spillovers in clusters occur through various forms of local inter-organizational collaborative interaction, through increased competition and rivalry, and by spillovers following from local mobility and sociability of individuals (Porter 1998, 2000, Malmberg and Power, 2005, Maskell 1999, 2000, Malmberg and Maskell, 2005, Belussi, 2004). In the context of knowledge spillovers and their localization, distinction between "tacit" and "explicit" knowledge is highlighted. The impact of social capital and social ties as "carriers" of knowledge, particularly the tacit one is highlighted (Porter 1998, Porter 2000, Lorenzen 2007, Maskell 1999, Maskell 2000, Morina-Morales, 2005, Huggins 2007, Cooke et al 2005, Malmberg and Power, 2005). Social capital is seen as a "local phenomena". Some researchers (Amin and Cohendet 2005, Gertler and Levitte 2005) however

argue that "social proximity" is possible without physical contact. Also, it has been argued that the trans-local connections play an important role in knowledge creation within clusters, highlighting the importance of global networks. An important dimension of clusters in transition economies is the "tearing down of old and building up new linkages", where the emerging market economy is expected to provide a myriad of market incentives leading to the externalities and spillovers. However, this transformation can not be considered inevitable. The ability to respond to market incentives is determined by the overall technological capability. Moreover, technological change may be inhibited by the fact that some elements of technology are tacit. Again, the networks are highlighted in literature as a way to address the "tacitness" of knowledge. With transition and increasing FDI, global networks may play a role in the domestic innovation process, however development of clusters and knowledge spillovers are not automatic as foreign-owned subsidiaries need to build linkages and learn to work together and with local partners. Another key aspect for development of clusters is the low level of social capital, or more narrowly trust.

While there is limited empirical research in transition economies on clusters, policies that facilitate clusters and networks have gained increasing importance in transition countries of South-East Europe. The objective of this paper is to examine the nature of knowledge spillovers and innovativeness of a selected group of firms in Bosnia and Herzegovina and the role geography and trust play in facilitating these.

Research Methodology/Approach: The firm level data has been collected based on a detailed questionnaire administered using in-depth structured interviews for a pilot group of companies in BiH. The limitation of this research is a relatively small size of the sample of firms, therefore this sample will be considered as a pilot sample to inform future research. In-depth surveys of firms from the pilot sample were complemented by case study of selected firm(s) that provide more qualitative understanding of the process of localized learning and innovation, with the objective of understanding how firm-level and cluster-level and network processes interact in a particular transitional context-BiH region.

Findings: At the time of submitting this abstract, the detailed analysis of the questionnaires (transcribing, coding, SPSS) is being carried out, therefore the author can not report findings at this stage; these will be reported once the full paper is submitted.

Originality/value: This paper aspires to be a contribution to research on clusters specifically for transition economies, in the following way: by looking at knowledge spillovers and the role that proximity and trust play in facilitating these among firms in Bosnia and Herzegovina (BiH). There has been no published research on clusters in BiH, while BiH is an interesting case given its transition to a market economy, its post-conflict legacy as well high inflows of aid. The limitation of this paper is a relatively small size of

the sample of firms, therefore this sample will be considered as a pilot sample to inform future research.

1. Introduction

This paper aspires to be a contribution to research on clusters for developing economies and specifically transition economies, in the following way: by looking at knowledge spillovers and the role that proximity and trust play in facilitating these among firms in Bosnia and Herzegovina (BiH). There has been no published research on networks or clusters in BiH, while BiH is an interesting case given its transition to a market economy, its post-conflict legacy and low degree of trust associated with conflict, complex governance structure as well as high inflows of aid. First, a brief literature review to highlight key concepts, theoretical framework(s) applicable for the research is presented, including reference to research on developing and transitional economies. Following a section on BiH country context, the research objective and methodology are presented, and finally (preliminary) findings of the field research are presented. The limitation of this paper is the size of the sample of firms (40 firms total) included in the second phase (qualitative phase), therefore the findings presented are considered preliminary, as the intention is to increase the sample of participating firms in the qualitative research, subject to firms willingness to participate.

2. Literature review

Most definitions share the notion of clusters as localised networks of organisations, whose production processes are closely linked through the exchange of goods, service or knowledge (Belussi (2004) provides a review of different cluster definitions). Knowledge in clusters can be created through various forms of local inter-organizational collaborative interaction, through increased competition and rivalry, and by spillovers following from local mobility and sociability of individuals (Porter 1998, 2000, Malmberg and Powell, 2005, Maskell 1999, 2000, Malmberg and Maskell, 2005, Belussi, 2004). However, literature (Beaudry and Breschi, 2003) also suggests that there can also be negative externalities from clusters, the "congestion externalities" reflected in cost of labour and real estate and including strong relational ties that may reduce flexibility and lead to technological lock-ins. In terms of empirical evidence, there is a large body of empirical studies on localized knowledge spillovers in clusters in developed economies (Malmberg and Power (2005) review over 100

empirical studies on this issue). In the context of knowledge spillovers and their localization, distinction between "tacit" and "explicit" is highlighted (Scott 2006, Ernst and Lundvall 1997, Johnson et al 2002). Tacit knowledge is difficult to transmit and can often be only transferred by means of close personal interactions, while explicit knowledge is codifiable. Both types of knowledge are symbiotic, and even though codified knowledge can be exchanged, to make it operational a firm needs to develop supporting tacit knowledge (Ernst and Lundvall 1997). The impact of social capital and social ties as "carriers" of economic knowledge, particularly the tacit one is highlighted in literature (Porter 1998, Porter 2000, Lorenzen 2007, Maskell 1999, Maskell 2000, Morina-Morales, 2005, Huggins 2007, Cooke et al 2005, Malmberg and Power, 2005). Rocha and Sternberg (2005) and Malmberg and Power (2005) note that the success of a cluster and its ability to foster knowledge creation depends on various forms of local inter-organizational collaborative interaction, the role of trust is highlighted as crucial in fostering collaborative interaction. Social capital is seen as a "local phenomena", as some argue that interdependencies of different types of social relations makes dense combinations dependent upon proximity (Lorenzen, 2007). Other researchers (Amin and Cohendet 2005, Gertler and Levitte 2005) however argue that "social proximity" is possible without "geographical proximity". Also, it has been argued that the trans-local connections play an important role in knowledge creation within clusters, highlighting the importance of global networks.

Literature review on clusters in developing countries is far less comprehensive than for developed economies, and highlights that for clusters in developing countries, Porter's conditions of the advanced diamond present in developed clusters do not hold (specifically, there is strong reliance on export markets, low local rivalry), as Porter also asserted (2000). On the other hand, from the existing literature review it does appear that inter-firm collaboration is important and that often external pressures spur this cooperation and upgrading by firms (some developing country studies: Tewari (1999), Kennedy (1999), Knorringa (1999), Nadvi (1999), Schmitz (1999), Rabellotti (1999), Visser (1999), Weijland (1999), Perez-Aleman (2000, 2005), Caniels and Romijn (2003), McCormick (1999)). However, it is important to understand how these external pressures get transmitted into concrete organizational changes within and between firms. Technological change is not something firms in developing countries simply "buy-in" from outside. On the contrary, technological change is rooted within the structure of the firm itself and therefore there is a much wider scope for understanding technological upgrading in developing countries than just focusing on "acquisition" of outside technology and equipment (Bell and Albu 1999, Ernst and Lundvall 1997, Dahlam and Nelson 1995, Kitanovic 2007). Successful development is possible, if firms are able to successfully use technology, which depends on their 'technological capabilities'. The term 'technological capability' includes knowledge and skills needed to acquire, assimilate, utilize, adapt, and create technology (Bell and Albu 1999, Ernst and Lundvall 1997). The level of technological capability of a firm is

influenced by its relationships with other actors, as firms operate in a complex industrial network characterized by competition and cooperation (Ernst and Lundvall 1997). Consequently, innovation is not only a technological, but also a social process resulting from informal and formal communication networks (Dahlman and Nelson 1995, Bell and Albu, 1999). Similarly, Ernst and Lundvall (1997) stress that technological learning in developing countries has two challenges: the acquisition of the codified knowledge element of technology and the development of tacit, firm-specific knowledge.   Ernst and Lundvall (1997) argue that "the creation of tacit knowledge is the decisive prerequisite for successful development. A weak tacit knowledge base constitutes a major barrier that delays or in some cases even obstructs international technology diffusion to developing countries".

Furthermore, Bell and Albu (1999) present a conceptual framework that distinguishes between clusters' knowledge systems based on following three criteria: the difference in the complexity of technologies in the observed clusters; the difference in the distance between the observed cluster and the international technological frontier; and the difference of the individual clusters' knowledge systems which are responsible for differing technological dynamism of observed clusters.   Like Bell and Albu (1999), Markusen (2003) stresses that it is not the space that 'self-organizes' following meso-level rules, but it is the decision-making of firms that shapes the space and its development process.   Therefore, to understand the process of localized learning and innovation, there is a need to place firm level learning at the centre of cluster analyses with the objective of understanding how firm-level and cluster-level processes interact (Giuliani 2007, Bell and Albu 1999, Caniels and Romijn , 2003, Martin and Sunley 2003, Boschma and Frenken, 2006).

Clusters in transitional economies exhibit most of the features identified for clusters in developing economies, but also have specific ones related to region's socialist history (Radosevic, 2000, Kitanovic, 2007, Jensen, 2004). An important dimension of the transition is the "tearing down of old and building up new linkages", where the emerging market economy is expected to offer the myriad of decentralized information streams leading to the externalities and spillovers.   However, this transformation can not be considered inevitable. Openness of the economy does provide incentives for restructuring but does not per se lead to technological development (Radosevic, 2000, Kitanovic, 2007).   The ability to respond to market incentives is, like in the developing country context, determined by the overall technological capability, a combination of knowledge, skills and organisation of firms, interactive learning and roles and strategies of firms, governments and institutions of countries. Moreover, technological change may be inhibited by the fact that some elements of technology are tacit (Radosevic, 2000, Kitanovic, 2007).   Again, the networks are highlighted as a way to address the "tacitness" of knowledge.   With transition and increasing FDI, global networks may play a role in the domestic innovation process, however development of clusters and networks in not automatic as

foreign-owned subsidiaries need to build linkages and learn to work together and with local partners. Another key aspect for clusters in transition economies is the low level of social capital, or more narrowly trust. Post-communist societies are seen as a facing a "dual social challenge", on one hand lack of generalized trust and very low collaboration in formal settings, and on the other high incidence family and informal networks, where 'entry' is discouraged (OECD 2005, Bozovic, 2003, Ketels and Solvell 2007, Raiser et al 2003, Rasier et al, 2001, Humphrey and Schmitz, 2001, Mungiu-Pippidi, 2005, Bartlett and Bukvic, 2002). While this is suboptimal for the overall society, empirical and theoretical research (Cooke et al, 2005, Huggins, 2007) also suggest that firms that predominantly use family-based social capital have low rates of growth and innovation and as they grow their dependency shifts, away from social networks of owners towards network capital.

3. Context: Bosnia and Herzegovina (BiH) –Country Profile

During the first half of 1990s, BiH experienced the most devastating economic collapse of any economy in the Central and Eastern Europe since World War II. The war changed the social and economic map of the country (World Bank 2005). As IMF (2005) highlights "disruptions of civil war left plant and machinery severely outdated if not destroyed. Know-how was lost through large scale emigration and internal displacement of the labour force. And those enterprises, previously part of BiH's vertically integrated industries found themselves isolated and without traditional local markets. And with the break-up of Yugoslavia, access to markets in the Former Yugoslav Republics was disrupted". All of this left BiH's GDP at less than 20 percent of its pre-war level (World Bank, 2005).

In 1996 with the return of peace a major effort has been undertaken focused on BiH's post-war economic recovery as well as its transition to a market economy. BiH has made notable economic progress since 1996 with real GDP that quadrupled between 1995 and 2004, however much of the economic growth has been fuelled by over $5 billion in donor loans and grants, rather than by private investment.

Most firms in BiH are now privately owned, although the share of the private sector in output was only about 50 percent in 2005. This is among the lowest in the SEE region where in Serbia and Montenegro it is 65 percent, 68 percent in Croatia and 71 percent in Bulgaria. Small and medium sized enterprises (SMEs) play a prominent role in BiH economy. EBRD reports that in 2001 in BiH there were only some 200 enterprises that were classified as large enterprises compared to over 30,000 SMEs. While BiH has the lowest number of large enterprises in the SEE and pronounced micro enterprise participation, its number of SMEs per capita is also the lowest in the SEE region. There are only seven SMEs per 1,000 inhabitants in BiH

compared to over 27 SMEs in Bulgaria and Romania. Also, within the SMEs there is a pronounced share of micro-enterprises where over 85 percent of the SMEs in BiH are micro-enterprises with 10 or fewer employees. In terms of sectoral composition, SMEs registered in trade and services account for 57 percent while those registered in construction and manufacturing represent 27 percent.   The SME sectoral composition closely corresponds to the sectoral composition of the value-added of GDP where the services sector accounted for over 60 percent of value added by sector of GDP in 2003.   In 2003 the share of agriculture in value added was estimated at 10 percent and industry around 28 percent, of which some 12 percent was accounted by manufacturing.

Moreover, foreign firms do not play a prominent role on the enterprise scene in BiH, this is despite the fact that levels of FDI in BiH have steadily increased in the past years. However, FDI inflows per capita to BiH are still among the lowest when compared to other SEE countries.   Relatively low inflows of FDI have not only resulted in limited presence of foreign firms in BiH, but as World Bank (2005) argues, have resulted in poor integration of BiH enterprises into international production and distribution networks and their low competitiveness. BiH firms surveyed by World Bank and EBRD export only 10 percent of their sales and only firms from Serbia and Montenegro in the SEE region have lower export intensity (World Bank, 2005).   Several empirical studies have shown that FDI has played an important role in transfer of technology in transitional economies (Doyle et al, 2001). Also as noted, several authors have argued that the knowledge creation within clusters is dependent upon trans-local connections (Amin and Cohendet 2005, Gertler and Levitte 2005)**.** However, in BiH this knowledge transfer is only beginning to take place and on a relatively limited scale. Finally, as Propris and Driffield (2005) highlight, not only do local firms gain significantly from FDI in their clusters in terms of localized knowledge spillovers, but so do foreign investors from "reverse" spillovers from local firms. Therefore, while clearly it would be difficult to infer from Propris and Driffield (2005) research on FDI and clusters in the UK that a possible motivation of foreign firms to invest in BiH are the "reverse" knowledge spillovers, BiH nevertheless may want to take a more integrative perspective to its FDI and cluster policy.

4. Research Objectives and Methodology

4.1 Research Objectives

Drawing on the above literature review, the objective of this exploratory study of firms in BiH is to examine the nature of network relations, knowledge spillovers and innovativeness of BiH firms and the role geography and trust play in facilitating these.   In contrast to studies that assume existence of clusters apriori, the proposed methodology will assume

that geographical proximity by itself does not guarantee that cooperation and knowledge spillovers will take place among firms. Therefore, to understand the process of (localized) firm learning and innovation, this research will place firm level learning at the centre of analyses with the objective of understanding whether and how firm-level and cluster-level and network processes interact and the importance of geographical proximity for firm learning.

4.2 Research Methodology

There is a diverse array of methodological approaches used to study clusters, and different methods can be grouped as follows. The first approach employs a diverse set of statistical-analytical tools to measure the degree of clustering found in local and regional economies. The second approach involves the conduct of case studies, while the third approach focuses on the analysis of public policies designed to promote establishment and/or growth of individual clusters or sets of clusters (Wolfe and Gertler, 2004). A criticism of methodologies that focus on a statistical snapshot of the cluster is that they only suggest the existence and possible location of cluster, but do not provide much insight into the nature and strength of local firm linkages, knowledge spillovers, social networks and institutional support structures argued to be the defining and distinctive features of clusters (Cooke, 2006, Martin and Sunley, 2003, Wolfe and Gertler, 2004, Cooke and Huggins, 2004, Breschi and Lissoni, 2001). But there are also serious risks to qualitative cluster analysis as well, as many such studies implicitly invoke "know it when you see it logic" (Feser and Luger, 2003). Moreover, operationalization of social capital is complex (Cooke et al 2005, Iyer et al 2005, Tura and Harmaakorpi 2005), and while recognizing that social capital is multidimensional, in an individual empirical study it is reasonable to limit the scope of the concept. Empirically one of the most common measures of social capital has been reported levels of trust in other (Iyer et al, 2005). Moreover, it is important to understand local variation of social capital and local impact of social capital (Iyer et al 2005, Tura and Harmaakorpi 2005, Woolcock, 1998).

Survey of literature points out that there are almost no studies on knowledge spillovers for developing or transitional countries that solely rely on secondary data. Instead, these studies rely on direct surveys of firms that are explicitly questioned about "sources" of their knowledge. In this approach the focus is on establishing inferences about the relative importance of distance on the ability to appropriate spillovers through quantitative and sometimes qualitative data, rather than building and testing an econometric model. Survey of literature suggest that this is predominant method applied in developing and transitional countries due the poor availability of secondary data (Eraydin and Armatli-Koroglu, 2005, ul Islam, 2006, Giuliani, 2007).

Finally, the relevance of patenting data as measures of innovation is less in the case of "catching up economies", as the technology effort of firms in these countries is mostly not at the world innovation frontier. Innovation surveys of firms in transition economies show that the highest percentage of companies' innovators consider improving product quality as very important objective of their innovation activities (Radosevic, 1999). Focusing therefore only on patents could mislead on the extent of innovative activities.

Owing to lack of firm-level data in Bosnia and Herzegovina and the type of questions being asked, a field study was necessary. Specifically, BiH does not have any input-output data, industrial production data or firm innovation data at the national or regional level, therefore applying statistical-analytical methods to study clusters and firm innovation in BiH was not possible. Therefore, field study was necessary and had a two tier phase approach. The first phase included a broad field-based survey using a structured questionnaire among manufacturing firms in BiH. Firms were selected from a subset of manufacturing sectors in Bosnia and Herzegovina (BiH), reasons for selection of target subsectors are detailed below. The second phase focused on understanding how does (localized) learning and innovation takes place at the firm, a qualitative interview methodology for a selected group of firms was carried out to understand in depth the process of (localized) learning and innovation, with the objective of understanding whether and how firm-level and cluster-level and network processes interact.

The BiH national accounts statistics, which are organized according to international classification standards, identify 22 product groups in manufacturing. These can be further organized into two larger groupings: heavy industry (including basic metals and minerals, chemicals, and paper), and light manufacturing (LM). Light manufacturing products in turn can be organized into six principal subsectors. These are presented in the following table, which shows their shares in broader economic aggregates.

The two largest subsectors in the light manufacturing sector are fabricated metal products and wood processing. Together they represent nearly 60% of total light manufacturing GDP, 22% of total BiH manufactured goods sales, and over 15% of BiH exports of all goods. As can be seen in the final column, fabricated metal products showed the highest growth rate prior to the crisis of any of the six light manufacturing subsectors. Given that wood processing, fabricated metal products and plastic and rubber products account for almost 70% of light manufacturing GDP in BiH and also account for major share of BiH manufacturing exports and its recent growth, but also encompass a wide range of firms, both smaller ones and larger ones, locally owned and joint ventures, this research has chosen to focus on firms in these three sectors.

Table 3: Economic Shares of Light Manufacturing Subsectors			
Product Sector	Share of Light Manufacturing GDP	Share of Total Manufactured Goods Sales	Share of Exports of Goods
Apparel	8.1%	1.8%	4.9%
Footwear	8.2%	2.0%	5.5%
Wood Processing	28.1%	11.0%	7.4%
Plastic & Rubber Products	8.3%	3.4%	2.1%
Fabricated Metal Products	29.8%	11.1%	7.9%
Machinery	17.4%	6.8%	11.8%
Light Manufacturing Total	100.0%	36.1%	39.6%

Source (this and following table): BiH Agency for Statistics, *National Accounts*

Table 2: BiH Light Manufacturing Sectors: Value Added (GDP) in thousands, EURO					
Product Sector	2005	2006	2007	2008	Growth
Apparel	37,656	39,383	48,077	50,981	35%
Footwear	25,760	41,537	42,722	51,239	99%
Wood Processing	121,625	134,812	162,411	175,932	45%
Plastic & Rubber Products	29,443	33,406	43,821	52,109	77%
Fabricated Metal Products	92,144	117,492	145,261	186,582	102%
Machinery	60,644	66,522	84,715	109,136	80%
TOTAL Light Manufacturing	367,272	433,154	527,007	625,980	70%

As noted, the field study had a two tier phase approach. The first phase included a field-based survey using a structured questionnaire among wood processing firms in BiH. This survey was conducted as part of a USAID co-funded technical assistance project and was carried out by 10 partner organizations throughout the country in early 2010 and the researcher was

able to gain access to questionnaires collected during this phase and analyze these. The 164 firms in the wood processing sector that completed the survey represent over 40% of all companies (per value of production) that operate in the wood sector in BiH. The questionnaire includes sections on firms' general profile, financial performance, source of suppliers, business goals, new product development and market development, quality certificates that firms holds, patents (to begin to understand the extent of innovation) and labour skills. The results of this (broad-based) survey provided knowledge on general characteristics of the sector and some insights into how innovative the BiH companies are. [Findings from this survey are detailed in the findings section].

However, to understand how does (localized) learning and innovation takes place at the firm, the researcher further applied a qualitative interview methodology for a selected group of firms (40 total) to understand in depth the process of (localized) learning and innovation, with the objective of understanding whether and how firm-level and cluster-level and network processes interact. In determining the sample of firms that were selected for the second phase, consideration was given to each subsector selected in the first phase in order to maintain (some) representativeness of the structure of the manufacturing sectors selected. Consideration of the firms' size (measured by employment data, classification based on EU definitions of micro, small, medium and large enterprises) was also given to avoid over or under representation of smaller (larger) firms in the sample. Finally, the sample of firms was subject to the a key constraint in that the firm had to agree to participate in the research and enable researcher to spend one, and in some cases several days at its production site and with key employees of the firms.

The qualitative interview methodology consisted of a semi-structured questionnaire and an open-ended interview with selected firms. The questionnaire used in these semi-structured interviews includes sections on firms' general profile, financial performance, innovativeness and technological capacity, networking and spill-over effects, external environment and barriers to technological upgrading, and trust. The questionnaire and open-ended interviews were administered by visiting each firm at its production site and interviewing the director, production manager and additional staff, in some cases. The data and information obtained reflects both a comprehensive firm internal assessment and one of the external environment in which the firm operates. In order to differentiate between proximate and distant linkage flows, questions have been systematically asked for both inter-firm linkages in proximity (that may generate agglomeration economies) as well as for linkages to distant firms and institutions. In order to analyze the relative importance of various types of inter-firm linkages, indirect or so called latent indicators-asking for the perceived importance of inter-firm linkages were used. Latent indicators were developed for linkages concerning tacit knowledge spillovers, labour

market pooling, input-output linkages and trust based linkages to business and cooperation partners.

5. [Preliminary] Findings.

The first phase included a field-based survey using a structured questionnaire among 164 wood processing firms in BiH, which represent over 40% of all companies (per value of production) that operate in the wood sector in BiH. The results of this (broad-based) survey provided knowledge on general characteristics of the sector and some insights into how innovative the BiH companies are (tables are included in Annex 1). Specifically, this survey highlighted that firms in wood processing sector have been growing until the recent crisis, that exports represent some 40% of their revenue and that over 40% of surveyed firms had developed and placed new products on the market during the last year, and in that some cases (furniture firms), on average 20 new products were placed on the market by the firm[58]. This survey also highlighted that the top three business goals for firms are increasing exports of existing products, new product development for export, and introduction of new technologies, suggesting that export markets are quite important for firms, despite exports representing a relatively smaller share in overall sales [importance of distant/proximate of buyers was further analyzed in the next phase]. The survey also confirmed that the relevance of patents as a measure of firm innovation is negligible, as only one firm reported holding a patent. Finally, to understand where surveyed firms stand in terms of technological frontier of production, it is worth highlighting that only some half of firms surveyed hold at least one international quality certificate.

Drawing on the general insights from the first phase, the second phase of the research was focused on understanding how does (localized) learning and innovation takes place at the firm, and the researcher further applied a qualitative interview methodology for a selected group of firms (40 total) to understand in depth the process of (localized) learning and innovation, with the objective of understanding whether and how firm-level and cluster-level and network processes interact. This qualitative field research has confirmed the writings of Ernst and Lundvall (1997), and Bell and Albu (1999) who point out that technological learning in developing countries has two challenges: the acquisition of the codified knowledge element of technology and the development of tacit, firm-specific knowledge. Specifically, the qualitative field research among firms has shown that firms value and do gain access to a common pool of codified knowledge (field research indicates high importance for direct cooperation [with suppliers of equipment/customers] and use of paid consultants as transmission mechanisms of knowledge for firms), nevertheless firms still have to

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[58] -this number appears very high and was investigated further during the second phase

undertake a learning process in which they develop the tacit capabilities required to use, adapt and further develop the imported technology. The field research has showed that few components of production technology are acquired ``ready-made'' and then brought into use by firms using standard ``recipes''. Even in cases where the introduction of some element of new technology involved a relatively close approximation, the interactions with other elements in the production system have required creative problem-solving and innovative re-configuration of at least some elements in the overall production system. Specifically, firms have been asked for importance of technological insights gained from adapting and improving existing technology in use, the so called "learning by changing'' (Bell and Albu, 1999), and this has shown to be the most important way for participating firms to gain knowledge [the average perceived importance of this transmission mechanisms by firms is 4.15 on scale of 1-5]. Therefore, internally generated change seems to be an equally important driving force behind continuing improvements to products and processes for firms in BiH.

External sources also appear to play an important role as a source of knowledge for BiH firms. Moreover, examining the role that proximity plays in facilitating external knowledge spillovers, field findings suggest that the average (as perceived by firms) importance of knowledge spillovers from proximate firms and institutions is less than from distant firms and institutions and moreover that proximity to the source of knowledge is not important for firms' ability to appropriate knowledge. A possible explanation for this can be based on the Giuliani and Bell (2004) framework (based on analyzing the Chilean wine cluster) who stress that instead of the common argument that the meso-level cluster shapes micro-level firm behaviour, they argue for opposite direction of influence, where the "capacities of individual firms to absorb, diffuse and creatively exploit knowledge shape the learning dynamics of the cluster as whole". Extending this concept to the BiH context, when BiH firms were asked to identify and rate barriers that hinder firm's ability to access and utilize information and knowledge from other agents, BiH firms considered the weak technological capability of other agents [in their proximate environment] as a significant factor; other significant factors were firms' own technological capability and the cost of acquiring information/knowledge. To illustrate this point, one of the participating firms cited an old Bosnian proverb "In life, you can only learn from the one who knows more than you." Given this, it would appear that policy measures that foster inter-firm collaboration might not do as much, rather measures focused on strengthening firms' knowledge bases might ultimately lead to greater knowledge creation and stronger intra-cluster and firm network diffusion. A similar argument for clusters in developed economies is advanced by Beaudry and Breschi (2003) that stress that innovativeness of the peer-firms in the cluster is more important than the size of cluster.

Moreover, it is also clear that external sources of knowledge are not limited to machinery suppliers. Specifically, a very important external source of

knowledge and impetus for innovation, providing not just knowledge about product specifications, but also a wide range of other elements (e.g., know-how, knowledge about suppliers and other), are customers, and specifically, distant customers; as illustrated by the case of an important furniture buyer "IKEA" which is seen by a number of BiH companies as critical for their technological upgrade, including new product and process development, but also for their supply chain management innovations. Similarly, a Slovenian customer had sent out metallurgical engineers for periods of several months to train the BiH partner firms in quality control and production engineering" [This is similar to the finding of Nadvi's (1999) study of the Sialkot, Pakistan surgical instrument cluster, where links with foreign buyers were important sources of technological change. Also, Tewari (1999) emphasizes that tone of the key reasons for survival of a textile cluster in India was the learning relationship between first-time exporters and their foreign buyers].

Literature highlights that technology support organizations can also play important knowledge ``gatekeeper'' roles at the boundary of cluster knowledge-systems of firms in developing countries. Some of these may be public sector institutes, with varying degrees of support from local firms, which carry out research, or provide technical or training services [literature review provides a successful example in a developing country context for the Metal Industries Development Center in Sialkot, Pakistan Nadvi (1999)]. However, literature also points to different degrees of their effectiveness, where some seem to have been highly successful in bringing new knowledge, others have been much less effective (Bell and Albu, 1999). BiH firms do not perceive the technology support organizations as an important source of knowledge or as knowledge gatekeepers to other sources of knowledge [average perceived importance of knowledge flows from these organizations is very low, 1.23 on scale of 1-5, and also their role as gatekeepers to knowledge flows is perceived to be almost nil.]. To summarize, the field research has shown that the innovative strength in BiH remains encapsulated at the firm level and that there are weak if any links with institutions such as universities, institutes, regional development agencies and other, also that innovation is not a product of formally articulated R&D activities. This finding is very much in line with the research of Arocena and Sutz (2000) that note that in developing countries, micro-innovative strength remains isolated and encapsulated at the firm level an that many institutions that are important for innovative activities do not exist, and that innovation in developing countries is highly informal, i.e. not product of formally articulated R&D activities. Among the firms interviewed, not a single firm had introduced or planned to introduce a patent in the last five years, while almost all of them had developed new or improved their products and introduced new or improved their existing technological processes and opened new markets

The impact of social capital and social ties as "carriers" of economic knowledge, particularly the tacit one is highlighted in literature, moreover some argue that interdependencies of different types of social relations

makes dense combinations dependent upon proximity, while other argue that "social proximity" is possible without "geographical proximity". Interviewed individuals from participating BiH firms engage quite frequently in social activities outside work with organizations/individuals from whom the firm "sources" of knowledge, and these social contacts serve quite frequently as sources of knowledge for them. In addition, contrary to literature that suggests that trust in transition economies and BiH specifically is very low (Mungiu-Pippidi, 2005 Hakansson and Sjoholm, 2005, Smith, 2006, Pickering, 2006), participating BiH firms report that the degree to which they trust their business and cooperation partners, both proximate and distant, is high. Moreover, also contrary to literature review, their trust is slightly higher in their distant partners than proximate ones. Above findings can be examined in the context of literature review and other empirical studies (Iyer et al, 2005, Allesina and la Ferrara, 2000, Allesina and Rodrik, 2004, Glaeser, 2001) that suggest that locations that have ethnically diverse population have low levels of social capital and trust. Therefore, the reported lower degree of trust in proximate partners could reflect the fact that proximity in BiH context embodies an additional consideration, one of different ethnicity.   Moreover, one needs to be careful in drawing conclusions for the reported overall high degree average. A useful reference is the research (Rus and Iglic, 2005) that shows that in weaker institutional environment such as the one present in BiH, actors base their economic relationships on contract and that when trust is used in as a basis of business relationships it is likely to be centered on interpersonal trust (Rus and Iglic, 2005). This could explain the high degree of the reported trust in business partners, but also signal that there is a high prevalence in use of interpersonal trust for selection/formation of business partnerships, however this may limit economic and knowledge generation potential of firms due to their reliance on strong ties embedded within cohesive groups marked with closure.   This finding is in line with empirical and theoretical research (Cooke et al, 2005, Huggins, 2007) where it has been suggested that firms that predominantly use family-based social capital have low rates of growth and innovation and as they grow their dependency shifts from social networks of owners toward more open, cognitive networks.

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What does determine the HRM applied by MNEs in the luxury hospitality industry? The case of emerging, semi-mature and mature markets

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The purpose of this article is to analyse workforce management across cultures, which represents a key aspect organizations have to consider as they are affected by cultural values, customs and beliefs in the way they conduct their business and manage their human resources internationally. In particular, the literature review attempts to illustrate the causes determining HRM differentiation across countries as a result of the parent/host country effect as well as the other actors beyond management and outside of organizational boundaries that do affect HRM implemented across nations such as the role of institutions. The ongoing trend towards globalization and the resulting competitive pressures inside MNEs, prompt a review of the main subjects pertaining to Strategic IHRM (SIHRM) as applied in emerging, semi-mature and mature markets with the aim to highlight how IHRM further becomes connected with the overall business strategy of MNEs.

Purpose: This article aims at laying the theoretical grounds to an ensuing research work in the field of HRM applied to the global luxury hotel industry. The review of literature leads to the conclusion that business and context specificities including parent / host-country effects and institutional factors determine a gap between HRM in theory and HRM in practice. This divergence is further highlighted by the differing level of market maturity across countries where a MNE is set to operate.

Research Methodology/Approach: A quantitative survey will be used to examine the approaches and implementation of HRM policies and practices in a global luxury hotel chain operating in emerging, semi-mature and mature markets.

Findings: Being the hotel group a global organization, the survey will offer useful insight on how people management is occurring in different countries and contexts thus allowing the interpretation of results across locations and economies.

Originality/value: To the best of the researcher's knowledge, there has been no empirical study addressing the determinants of HRM applied by an MNE operating in the luxury hospitality industry within emerging, semi-mature and mature markets.

Practical implications: This paper aims to enhance understanding of the HRM model used by a global luxury hospitality concern as well as of the implementation of HRM policies and procedures across the differing national contexts where the company operates.

Keywords: HRM implementation; market maturity; parent / host-country effects; role of culture; role of institutions; luxury hotel industry

1. Introduction

The purpose of this section is to review literature pertaining to International Human Resources Management (IHRM) and highlight its key issues. Nonetheless, the analysis would be incomplete if an initial digression on the nature and structure of multinational companies were not featured, as the shift from domestic to international business is at the base of the emergence of the IHRM paradigm in transnational organizations.

Next, the literature review attempts to illustrate the causes determining HRM differentiation across countries as a result of the host country effect. In fact, differences in workforce capability, labour productivity and employment systems affect the management of human resources which needs to be modified from country to country (Boxall, 1995). Then, the review attempts to recognize that there are other actors beyond management and outside of organizational boundaries that do affect HRM implemented across nations.

Having thus gradually explored the appropriate premises and put things into perspective, the paper then illustrates the key issues of IHRM which relate to how international organizations manage their human resources from country to country. In particular, special reference is made to the increased complexity added to HRM by the international settings of an organization as opposed to that encountered in an exclusively national context. Consequently, the researcher examines the major IHRM concerns related to

how MNEs manage their international human resources coherently and consistently in a cost-effective way across all countries of operation.

In the last section, the analysis shifts towards the luxury hospitality industry and the determinants of HRM experienced by MNEs in this particular industrial sector while operating in emerging, semi-mature and mature markets.

2. Literature review

2.1 The international business context of multinational enterprises

After the Second World War there has been a dramatic and incessant increase in the number of MNEs which, from the 1950s onwards, was influenced by the extent of Foreign Direct Investment (FDI) worldwide and its role in the recovery and expansion of the world economy. According to Jones (1994), however, multinational organizations first appeared in the form of manufacturing multinationals much earlier in the mid-nineteenth century with pioneering German corporations such as Singer and Siemens. Definitely, the ensuing globalisation of production and consumption (Buckley and Ghauri, 2004) to these days have determined the expansion of business operations along the lines of a careful location strategy, which according to Dunning (1998) affects the dynamic relationship between the value-added activities of multinational enterprises in distinct locations.

Consequently, Dunning and Lundan (2008) in defining a multinational enterprise state that:

> *"A multinational or transnational enterprise is an enterprise that engages in foreign direct investment (FDI) and owns or, in some way, controls value-added activities in more than one country" (p.3).*

The above is the essential definition of a multinational enterprise and one that is generally embraced by scholars, practitioners as well as by economic agencies, governments and regulating bodies worldwide. Resultantly, the interface between headquarters and subsidiaries of a MNE becomes a most critical element of strategic control which affects the decisions of management in terms of local responsiveness and co-ordination (Doz and Prahalad, 1984). The dynamic architecture featuring the centre as opposed to the periphery has prompted Ghoshal and Bartlett (1990) to conceptualize MNEs as "interorganizational networks" (p. 615) set to operate in a constellation of external networks including customers, suppliers, regulators and institutions with which the various units of the MNEs have to interact. In particular, Ghoshal and Nohria (1989) contend that it is evident that, within a MNE, the different national subsidiaries feature unique circumstances that relate to the complexity of their environmental contexts

and their local resource levels. Within this compounded perspective, Martinez and Carlos (1989) maintain that co-ordination mechanisms of MNEs surpass their rigid and structural form by virtue of incoming and outgoing knowledge transfer flows across subsidiaries, thus becoming more refined and informal (Gupta and Govindarajan, 2000).

In his landmark article illustrating the 'tortuous evolution of the multi-national corporation', Perlmutter (1969) identifies four major approaches to the management of overseas subsidiaries.   First, the *ethnocentric* whereby the values, culture and strategic decisions are defined by the expectations of the mother company, thus offering very limited power or autonomy to the subsidiaries overseas which are predominantly managed and controlled by expatriates or former staff at the headquarters.   Locals have minimal input on policies and procedures since communication occurs through directives elaborated and issued by HQ.   Second, the *polycentric* approach is characterized by a softer approach according to which each international subsidiary is considered as an autonomous business unit, controlled and managed by local managers.   Indeed, while key decision-making related to financial and strategic issues is a prerogative of headquarters whereby the key HQ positions are exclusively covered by people from the parent company, local managers are given higher profile tasks which reflect their deeper understanding of local requirements in the areas of marketing, production and human resource management (HRM).   Consequently, subsidiaries are allowed a greater degree of autonomy enabling the maintenance of policies and practices pertaining to employee relations, which are aligned with the culture and regulatory framework of the host country.   Then, the *regiocentric* approach is characterized by further devolvement by HQ according to which decision making and workforce management is implemented on a regional or geographical basis, but top positions are still held by nationals of the parent company's country. Nevertheless, regional managers maintain enhanced power and autonomy even if these are limited within the confines of the region where they operate. The last model of attitudes towards management of increasingly globalised companies is represented by the *geocentric* approach according to which the management of headquarters and overseas subsidiaries occurs through a combination of both home country and parent company managers.   Within this perspective, it is essential to foster a clear corporate identity characterized by strong company culture and environment based on a seamless exchange of ideas, values, information as well as best practices.

For both last approaches there is no decisive influence or dominance of any particular culture, either of the home or of the host country.   While it is granted that local legal requirements are fulfilled in the different locations where the MNE operates, such an organization tends to develop overarching regional or global approaches, policies and practices shared internally.

Twenty year after Perlmutter, Bartlett and Ghoshal (1989) classified MNEs into four main types, each kind being identified according to its

developmental stage. Initially, the multinational organization features a critical local presence in each of the locations in which it operates thus determining a *decentralized approach* with autonomy at subsidiary level and limited strategic guidelines from the headquarters. Spivey and Thomas (1990) refer such organizations as being mostly decentralised federations in which international activities are considered as part of a portfolio of independent and locally focused businesses. The ensuing type is the *global entity* characterised by a considerable centralised and global approach to markets whereby headquarters assume a more decisive role in determining policies applied at subsidiaries' level. This sort of MNE thrives in settings according to which, as Levitt (1983) maintains, markets are crossing boundaries and becoming similar by virtue of converging preferences by different nationalities, thus determining the emergence of global markets. The third kind of MNE Bartlett and Ghoshal highlight concerns the *international organization* which is characterised by a more decisive federal structure in which the centre plays a more co-ordinating rather than directive role. This evolution reflects an adaptive response to increased sophistication and diversification of markets which compels an organization to be flexible and nimble to accommodate varied market demands internationally. This capability can be attained on condition that an organization is successful in applying knowledge and skills developed all the world over to local and peculiar circumstances. The fourth and last sort of MNE is the *transnational company*, which represents the original contribution of the two authors. In fact, Bartlett and Ghoshal contend that transnational organizations capitalize on the strengths of the previous three forms in order to meet the challenges of an increasingly complex global market (Harzing, 2000). In particular, this organizational form displays flexible structure whereby accountability is devolved to lower levels and subsidiary teams, knowledge is openly shared and accessible as well as co-ordination is nurtured through the sharing of values, co-operation and team spirit. On these grounds, a transnational organization is capable to face the challenge posed by globalization, local specificities and incessant innovation. Thus, it is of capital importance that, for a transnational organization to survive and excel, it is able to innovate its activities constantly and consistently by embedding a learning and innovative attitude throughout its workforce.

Since 1986, Boddewyn *et al.* (1986) have been recognizing the peculiarity of service MNEs as distinct from those non-serving which deal with product manufacturing on the grounds that "by the year 2000, more than half of the world's multinational enterprises will be in services" (p. 54). Indeed, about twenty years after a report by UNCTAD (2004) reinforced such development in MNEs' activity by highlighting their focus on services which, according to Li and Guisinger (1992), is critically influenced by local governments. The ascending role of workforce in the delivery of MNEs in both service and non-service provision is further stressed by Lowell (1999) who vividly contends that:

> *"World-class talent has enormous scale effects
> as interaction costs fall because it can be
> leveraged across ever greater geography. It
> underlies most opportunities to specialize. It is
> the ultimate source of all intangible capital. It
> underpins all the other components of
> intangible capital necessary for global success.
> And, unfortunately, it is in short supply"* (p.
> 182).

The above leads to the conclusion that MNEs, with their dynamic infrastructure encompassing headquarters and subsidiaries, feature a unique element of ownership or control which bears within itself the problem of managing human resources and employee relations across distinct national contexts. Thus, MNEs are compelled to overcome challenges related with the management of an international human resource.

2.2   IHRM policy implementation consistency: a utopia?

The above premises indicate that international human resource management (IHRM) has to be analysed in the light of the organizational context, the environment as well as the shifting economic, business and labour conditions in which it is applied (Hugh *et al.*, 2007). Therefore, the study of policies and procedures together with possible 'best practices' in IHRM ought to be filtered by considering the fact that business dynamics vary and affect IHRM depending on the external social, political, cultural and economic environment as well as the industry, the firm, the sub-unit, the group, and, certainly, the individual (Schuler *et al.*, 2002). Consequently, IHRM must not be studied in isolation, but rather seen within a multi-level contextual perspective thus being defined as the way MNEs manage their human resources across varying national contexts (Harris *et al.*, 2003).

To this end, especially informing is the work by Ferner and Varul (2000) who conclude that IHRM is critically affected by the country of origin model of personnel management, which, in turn, is conditioned by factors within the national business system. Their research outcome results from an analysis of the highly structured German institutional framework which determines a considerably reactive and administration-centred personnel management approach, which presses against the strategic adaptation of a wider IHRM implementation along the lines of the 'Anglo-Saxon' model. Nonetheless, in his empirical study of Chinese MNEs, Shen (2005) argues that it is possible to develop a generic IHRM model which is widely applicable. In particular, the author identifies the interaction of the home HRM system, firm-specific factors and host-contextual factors as being the main concurring determinants of an MNE's IHRM policies and practices.

IHRM implementation in a MNE is not a straightforward process, but rather reflects the modus vivendi of subsidiaries and their dynamic interplay in relation to the organization headquarters. In fact, Rosenzweig and Nohria (1994) in studying human resource management practices in 249 U.S. affiliates of foreign-based MNEs from Canada, Japan and Europe demonstrate that, broadly, affiliate HRM practices are strongly aligned with local practices while, however, differing in particular practices. The extent of 'local isomorphism' as the authors put it, is determined by the founding method, the reliance on local inputs, the ratio of expatriates within the workforce of the subsidiary, the closeness of communication with headquarters and the need for internal organizational consistency. Moreover, the study shows that the country of origin of the parent company represents a considerably strong factor affecting HRM practices implementation, thus suggesting that MNEs are characterized by differentiated practices. Likewise, in their recent work analysing American and European firms operating in Japan, Simonin *et al.* (2009) confirm that internal consistency with IHRM practices is stronger when there is a marked presence of expatriates in the affiliate. Nonetheless, they find that this staffing approach is counterproductive as expatriates do not feature the required eagerness to acquire and disseminate knowledge related to the local market. On this issue, Fey *et al.* (1999) while studying effective human resource management practices for foreign firms in Russia, provide an interesting answer. In fact, their study indicates that hiring host-country employees who have work experience with other foreign businesses equips MNEs with a workforce featuring a general understanding of the proper attitude required to be successful in a foreign firm. Based on this premise, the authors contend that character is the main challenge and not the mastering of specific skills that can always be acquired.

Since MNEs are organizations with an impressive potential to transfer HRM procedures and practices across national borders, they have the force to modify national systems embedded in host countries through relentless pressure. Let it be noted that at the beginning of this decade, 63,000 MNEs in the world directly controlled around 690,000 subsidiaries, with the USA being the largest single national source of this activity (Edwards and Ferner, 2002). However, as Edwards *et al.* (2007) maintain, in practice there is a contradiction in terms in relation to the attempt to transfer in a standardized fashion a MNE's approach to a particular topic. Thus, the implementation of 'homogenized policies' is an impossible task due to the fact that their transfer may occur in full, partially, or not at all depending on the host country system. A case in point is post-communist Central Europe which, with its latest EU member states, features poorly structured employee relations allowing MNEs to unilaterally apply HRM strategies. According to a research by Meardi (2006) Poland, Hungary and Slovenia are characterized by nation-specific as well as cross-border employee resistance diminishing employers' freedom. This leads the author to conclude that policies may be successfully introduced only through a bottom-up approach embracing viewpoints from the shop-floor level.

Therefore, consideration of and accommodation to local circumstances are imperatives if policies are to be conveyed successfully across the globe. Further on this line, Edwards *et al.* (1999) elaborate on the concept of diffusion of employment practices in MNEs by highlighting that it is facilitated or hampered by factors such as the country of origin, the extent of production integration, the degree of globalization of organizational structure as well as the kind of product markets. Thus, the authors maintain that diffusion is the interplay between structural elements and political processes within a MNE, which they refer to as the 'bi-directional' connection between structure and politics.

2.3 MNEs and staffing

As illustrated earlier, the stages of internationalisation introduced by Perlmutter (1969) have immediate implications on the related staffing policies applied by MNEs. Thus, if an organization is aiming at maintaining a strong corporate identity in its overseas subsidiaries then the choice of an ethnocentric approach is a most opportune decision. For instance, according to Mayrhofer and Brewster (1996) European MNEs are especially keen on arranging their IHRM staffing actions along ethnocentric lines. Nonetheless, the recent work by Colakoglu *et al.* (2009) highlights that subsidiary staffing strategic choices have pros and cons in terms of knowledge transfer and integration depending on the origin profile of subsidiary managers. Namely, the authors contend that parent-country nationals (PCNs), host-country nationals (HCNs) and third-country nationals (TCNs) feature singular knowledge bases that offer specific benefits under different circumstances thus affecting subsidiaries' performance and, ultimately, their standing within the MNE network. Consequently, Gong (2003) sees a MNE workforce composition as being the result of distribution of PCNs, HCNs and TCNs across its subsidiaries. The author shows that 'national heterogeneity' is the key variable determining a subsidiary staffing composition which, in turn, modifies outcomes at various levels such as affective, behavioural, cognitive, strategic and, ultimately, financial. Indeed, the consideration of 'national heterogeneity' is all the more actual in view of the need to contain costs and maximize efficiencies related to an expensive expatriate workforce. According to Tarique *et al.* (2006), overseas assignments of PCNs have become exorbitant in terms of administration and support expenditures thus motivating MNEs to adopt a more inclusive approach. This would allow MNEs to capitalize on the effective deployment of TCNs and HCNs depending on the environment at strategic, national and organizational levels.

Staffing does represent a major issue for MNEs as policies originated from parent country headquarters affect the workforce composition and the business approach of affiliates acting in the global arena. Particularly illuminating are the findings by Harzing (2001) in relation with the roles of

international transfers of managers in MNEs: in particular, there is a sheer difference in approach across organizations deriving from the MNE home country, location of host regions and cultural gaps. The result is that management transfers occur for several distinct reasons, namely position filling, management development as well as coordination and control which bear important implications vis-à-vis the management of expatriates. Globally, staffing is a key IHRM determinant as it directly affects a MNE approach to innovation, organizational learning as well as corporate integration (Collings *et al.*, 2009). According to Makela *et al.* (2009) the staffing strategy of a MNE determines not only the human but also its social capital with direct effects on the management of 'knowledge stocks and flows' within the organization.

2.4 The expatriate workforce

In the volatile era of globalization, Bartlett and Ghoshal (2003) illustrate that new-line MNEs or transnational organizations are required to strike a balance among local, regional and global demands. This multi-layered reality does not favour the emergence of a 'universal' global manager but rather the existence of three categories of specialists: business, country and functional managers. Nevertheless, corporate top executives, while operating from the headquarters to administer the complex interplay of these specialists, try also to identify and nurture the finest talents for succession planning purposes. This structured approach to global management is further supported by findings in a study by Bonache *et al.* (2007) whereby the authors warn, on the one hand, about the complexity of managing international assignees beyond the cultural gap challenge, and, on the other hand, of administering the all-important challenge of repatriation.

Indeed, a historical digression on overseas assignments and their success and failure rates, indicates that expatriates are faced with overwhelming challenges related to their families (Hays, 1974). More recently, Forster (2000) indicates that in the UK, the 'international manager' is actually a myth due to the fact that while MNEs are expanding more globally, their home-country workforce is not. Same with Hays, Forster contends that while regular international relocations are psychologically unbearable for most employees and their dependants, long-term international assignments pose serious challenges to the employees' career prospects once repatriated. Thus, the author advices that PCNs could well be exposed to the international settings through enriching short-term overseas exposures while, at the same time, enabling them to reinforce the MNE strategy at the subsidiary level. In this same line, Collings *et al.* (2007) agree that conventional international assignments require an urgent review triggered by supply-side, cost-related, demand-side and career considerations. Thus, the authors indicate that nowadays MNEs have the ability to offer effective

alternatives in the form of short-term assignments, commuter assignments, international business travel and virtual assignments.

A properly structured approach to expatriation involves critical issues spanning from strategy, to selection and predeparture, compensation, performance management, repatriation, and career management (Bonache *et al.*, 2001). Still, a research by Harris and Brewster (1999) clearly highlights that reality is far from ideal: in fact, employees embarking on an expatriation program often get to know of such an opportunity in quite casual situations, such as a conversation over a coffee-machine. A most disarming finding is that the authors demonstrate that the HRM department become involved at a later stage of the dealings, thus leaving them covering a reactive role in their effort to administer the plainly bureaucratic side of the process.

Notwithstanding business practical shortcomings and wrongdoings as opposed to the rightful theoretical guidelines, Caligiuri *et al.* (2009) assert that sound international assignment selection systems should be able to define the compatibility of assignees to a new work environment. The authors maintain that such selection systems would offer an accurate estimation of an expatriation program success provided they consider factors including psychological and biodata information, personality characteristics, language capability, and previous international exposure. Fine-tuning of such predictive instruments is critically important because their efficacy contributes in optimizing expatriation expenditures in a process that, according to Hippler (2009), is not foreseen to decrease. In fact, the researcher argues that expatriates play a critical role in compensating for shortages in managerial and technical skills in affiliate businesses thus reinforcing in the process both knowledge transfer as well as strategic control of overseas operations. This, in turn, ensures integration and cohesion on a global scale.

From a business cost-benefit viewpoint, the return on investment (ROI) of expatriation processes is far from clear. Most recently, an extensive study by McNulty *et al.* (2009) showed that MNEs do not implement formal procedures to gauge expatriate ROI, but rather apply informal practices which are often inconsistent with the global strategy. According to the authors, there are two possible approaches to the ROI assessment of expatriation: firstly, it may be considered as a separate cost requiring estimation. Alternatively, the second option is to consider expatriation as an inherent cost of doing business on a global scale, thus requiring a broader HR impact perspective in calculating the ROI. In both cases, however, currently global firms are evidently ill-equipped to address expatriation ROI. An additional variable increasing the ROI calculation complexity is the element of retention following repatriation. As previously stated, repatriation offers major career challenges to the employee career perspectives often translating into resignation and increased workforce turnover. Thus, van der Heijden *et al.* (2009) contend that MNEs are foreseen to improve their ROI by offering

career support to their repatriates which, most importantly, employees themselves should be able to perceive and appreciate.

In the final analysis, it can be inferred from the above that researchers agree that the expatriation process is an extremely complicated process to assess due to its multifaceted nature. Consequently, the viewpoint of Welch *et al.* (2009) is indicative of the need to take the issue to a different and overarching discussion level involving the concept of 'intellectual capital' as applied to both organizations and individuals.

2.5 *HRM and the global luxury hotel chains*

Nowadays a successful business concept can expand globally, even to risky business contexts, by means of favourable and relatively safe contractual agreements (Yan *et al.*, 2007). Given the speed with which a hotel company can become truly global, it might be inferred that HRM would become global as a consequence. Indeed, Brewster *et al*. (2005) contend that International HRM applied by MNEs could be enabled to assume a global strategic value. In particular, the authors identify the factors determining the shift of HRM from international to global as being: talent management and employer branding, global leadership through international assignments, international workforce management and assessment of HR contribution. Further, Hughes (2002) maintains that the next stage of strategic HRM is universal HRM by capitalizing on 'best practices' perceived to be valid universally, such as establishing a service-oriented culture, nurturing a solid human capital base, motivating employees, and offering employees the opportunity to make a difference to service. Another framework used to identify the HRM model of a company operating internationally is offered by transnational HRM (THRM) (Dickmann *et al.*, 2009). According to this process-based viewpoint, THRM relates to knowledge networking and standardization of HRM policies and procedures in MNEs, thus allowing for deeper understanding of business contexts and the identification of international management practices to be developed.

Nonetheless, despite the global expansion of luxury hotel chains and the subsequent attempt to globalize the HRM function, a closer examination of local contexts demonstrates the existence of unique challenges pertaining to the political, national and cultural settings, which requires the local hotel HR professional to adapt accordingly (Naama *et al.*, 2008; Costa, 2004; Lu and Chiang, 2003).

Furthermore, labour markets critically affect the quality of service professionals: to this end, governments do contribute to the establishment of MNEs through, among others, the education of local nationals in hospitality vocational professions (Baum and Szivas, 2008; Kusluvan and Karamustafa, 2001). Even in developed countries such as Korea, research has shown that Training Managers working in international chain hotels modify training

programs in order to make it fit to the local culture (Lim and Wentling, 1998). Equally important, labour shortage is a ubiquitous challenge to be found even in populous China due to the lack of qualified labour force and the unwillingness of university graduates to join the industry (Zhang and Wu, 2004). On the other hand, surveys by Magnini and Honeycutt (2003) and Shay and Baack (2004) demonstrate the high failure rate of expatriated hotel managers as well as discrepancies between the expatriated managers' self-perception of performance and subordinate-rated managerial effectiveness.

In conclusion, the above mosaic of sample challenges compels HRM to adjust to the 'think global, act local' perspective whereby central offices originate wide-scope HRM policies and procedures and then it falls upon the local hotel HR manager to decide and act the best way they see fit with the local context. In fact, they know this better than anybody else in the HRM function. An example of such an approach is offered by Zuehl and Sherwyn (2001) who contend that, after analyzing employment termination practices in a sample of countries, MNEs may identify common employment termination practices as general guidelines to be considered.

3. Research outline

The case study organization is a global luxury hotel group: for the purpose of confidentiality, the name of the company is disguised. It will hereafter be referred to as the 'participant company' or 'the hotel company'. It belongs to a diversified international hospitality group, acting as the owner-manager, franchiser and management company of international deluxe hotels, resorts, and mixed-use real estate developments.

Therefore, the aim of this research paper is the identification of factors determining HRM in the luxury hospitality industry operating in emerging, semi-mature and mature markets. This will be attained by surveying HR managers at the hotel-unit level and in the administration offices of a global luxury hotel chain. Research goals are multiple, as the wealth of information will enable to draw useful insight in terms of the 'strength' of the HRM system (Bowen and Ostroff, 2004) and organizational commitment (Wright and Kehoe, 2008), for instance. Ultimately, the researcher will attempt to identify the model of HRM applied among the already existing such as International HRM, Global HRM and Transnational HRM, or, especially in the light of the current turbulent times, if it implements an HRM model of its own kind.

In the final analysis, using a case study organization that operates globally within the fast growing service sector it is hoped it will enable the exploration of the relationship between corporate guidelines and application of HRM policies and practices to different national contexts, thus contributing to the debate on the nature of HRM in the hotel industry.

4. Methodology and research design

A quantitative survey will be used to examine the approaches and implementation of HRM policies and practices in a global luxury hotel chain. As Saunders *et al.*, (2003), have pointed out the quantitative survey "is a popular and common strategy in business and management research", and surveys enable "easy comparisons and appear to be authoritative". (p. 92).

The survey is a useful tool for analyzing and assessing HR practice and the HR function in a systematic way and will allow the researcher to gather similar data and draw useful conclusions. Given the widespread presence of hotel properties and administration offices around the world, the author is confident that the minimum useful number of 30 respondents for statistical analysis purpose as advised by 'The Economist' (Saunders *et al.*, 2003) will be attained. Indicatively, the questionnaire will ask respondents to feed data on themselves and the workforce they influence. Then, following sections will deal with the extent of the adoption of HRM policies and practices by asking, to illustrate, about conditions of employment, job design, recruitment and selection, training, appraisal, quality management, communication and consultation, compensation and pay systems as well as satisfaction with various HR elements within the organization.

In summary, information will be sought in order to assess the extent of formal corporate HRM strategy application, the degree of integration of HRM as business partner and to reveal whether the approach of the hotel company in relation to manning is either ethnocentric or polycentric or geocentric strategy.

5. Possible findings

Apart from revealing information on the profile of HR professionals operating in the hotel group, important findings could occur in relation with the degree of ownership and accountability of HRM policies and procedures in areas such as selection, training and development, employee motivation, recognition, performance management, organizational commitment and organizational culture.

Also, as identified in the literature, useful insight will be obtained with regards to the all-important role of line managers in the sustained implementation of HRM policies and procedures, the extent to which they perceive HR as being important to the organization, as well as the nature of barriers to HRM implementation in general.

Next, HR managers' response will illustrate how they perceive and act upon Company decisions and directives being cascaded by Headquarters; thus the

survey may shed light on any possible communication gaps related to local implementation. Being the hotel group a global organization, useful insight will be obtained on how people management is occurring in different countries and contexts because the survey will allow the interpretation of results according to location and regions, thus enabling comparison against what is known from other countries based on practical and academic literature.

6. Research limitations

Although the research is planned to focus on all the properties of the hotel company around the globe, still the sample will be limited to the countries in which it operates. Then, responses are going to be obtained only from the HR professionals exclusively, leaving out of the research process both top management and all other levels of staff. Exactly because this research asks company HR professionals to assess the HRM function, there is the real possibility that results might be biased.

Indeed, due to the involvement of HR management exclusively, the researcher will be able to reach only the intended human resource (HR) policies while foregoing the implemented HR practices (Khilji and Wang, 2006).

Despite this single industry analysis has its merits, nonetheless it cannot be easily generalized as opposed to multi-industry studies that provide the opportunity to facilitate the understanding of issues more broadly. Thus, being this study hotel specific, caution is advised in drawing general conclusions.

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Access to Capital and Capital Structure of the Firm

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The paper examines the importance of financial constraints for firm capital structure decisions in transitions economies during 1996-2006 using endogenous switching regression with unknown sample separation approach. The evidence suggests that differences in financing constraints have a significant effect on a firm's capital structure. Constrained and unconstrained firms differ in capital structure determinants. Specifically, tangibility appears to be an extremely important leverage determinant for constrained firms, while macroeconomic factors (GDP and expected inflation) affect the leverage level of unconstrained firms, suggesting that those firms adjust their capital structure in response to changes in macroeconomic conditions. Moreover, financially constrained firms adjust their capital structures faster to the target level, which is consistent with the view that firms adjust their capital structures when they are sufficiently far from the target.

1.   Introduction

It is a documented fact that large investment projects are followed by equity and debt issues Leary and Roberts (2005), Alti (2006). Undertaking a large investment project affects both the hurdle rate and cash flows thus the riskiness of the firm and its valuation are affected as well. Therefore, management is responsible for the identification of a capital structure that results in maximum firm value. Since there is a large body of literature that studies the importance of financial constraints in determining firms' investment behavior and confirms the existence of two distinct regimes, it is

reasonable to expect that the resulting capital structure of financially constrained and unconstrained firms is likely determined by different factors.

Capital structure theories offer a number of determinants that are responsible for the variation in capital structure, while the empirical literature strives to find evidence that firms behave in accordance with the theory predictions. Scholars have identified a number of proxies that capture cost and benefits of debt financing and estimate leverage of the firm as a function of firm-specific characteristics.[59] Firm characteristics found to be important determinants of capital structure, they also determine firm's demand for capital, however, Faulkender and Petersen (2006) point out that supply of capital and firm's ability to access capital markets also affect capital structure.

The problem of access to capital was particularly sharp in Central and Eastern European (CEE) economies during the transition. For example, Haas and Peeters (2006), and Nivorozhkin (2005) report that firms in these economies tend to be significantly underlevered suggesting that they have limited access to external financing. It is not surprising since even nowadays debt remains the main source of financing in many transition countries due to underdeveloped capital markets and lack of equity capital.[60] Moreover, the majority of firms in these economies are private, thus, asymmetric information is particularly large for them, while the cost of collecting information about these firms for financial institutions is high.

The existence of problems with access to the credit markets is supported by the data. For example, according to the Business Environment and Enterprise Performance Survey (BEEPS) carried out by the European Bank for Reconstruction and Development (EBRD) in 2002, about a half of surveyed enterprises have difficulties with access to financing (Figure 3). These difficulties are well pronounced in Central European countries (about 50% of the firms in the Czech Republic, Hungary, Poland and Slovakia consider access to finance as a moderate or a major obstacle for their development) and less severe in Baltic region (only 25% of firms has experienced difficulties with access to finance). The same survey reports that the major obstacle in obtaining financing is its cost (Figure 4). The cost of the capital is particularly high in Poland (more than 70% of respondents think that the capital is too expensive), in the Czech Republic and Slovakia external capital is more affordable for firms (50% of firms consider the cost of capital as a serious obstacle), while in Baltic States only 30% of firms suffer from the high interest rates and other charges. Another survey that has been carried out by the European Commission in 2006 focuses on small and medium enterprises (SME) access to finance in the new EU-10 member states. Again,

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[59] This literature is fairly extensive and includes contributions of Rajan and Zingales (1995), Titman and Wessels (1988) and Frank and Goyal (2007).

[60] According to a survey carried out by European Commission in 2006 66% of surveyed firms go to banks to obtain financing (Figure 1). However, the percentage depends on the region Figure 2: 85% of Mediterranean firms go to banks to obtain financing, while in Central Europe this percentage is about 65% and in Baltic states it is only 53%.

half of the surveyed firms experience difficulties with access to finance through banks: 44% of managers feel that access to loans granted by banks is difficult as oppose to 42% who see it as being easy (Figure 5). Although firms report that nowadays it is easier to obtain a bank loan than a few years ago (Figure 6), the numbers imply that the situation regarding access to external financing has hardly improved even after the countries became EU members. At the same time, the existence of two approximately equally sized groups of firms that differ in their access to capital provides an opportunity to address a number of questions: Do the capital structure decisions of financially constrained firms differ from the capital structure decisions of unconstrained firms? Are their capital structures decisions determined by the same factors? How do financial constraints affect the speed of adjustment to the target capital structure? This paper aims to answer these questions by analyzing the financial behavior of constrained and unconstrained firms in the transition countries during the period 1996-2006.

The paper proceeds as follows. Next section surveys the literature. In section 3 I describe the data sources and provide summary statistics of the sample. Section 4 explains the econometric methods and discusses the determinants of capital structure in two distinct regimes. Section 5 considers the effect of financial constraints presence on speed of adjustment to target capital structure. I summarize the paper and conclude in section 6.

2. Literature

Traditional capital structure theories assume that capital availability entirely depends on characteristics of the firm. However, according to the credit channel literature, firm's debt issue patterns depend on its access to financial markets. In theory, a firm is considered to be financially constrained if it does not have sufficient internal sources to undertake investment opportunities and the cost of getting external financing is high. The main problem of empirical literature is that the obtained results are highly sensitive to the point of sample separation (Moyen, 2004) because it could be problematic to decide which group a firm belongs to since the severity of financial constraints faced by the firm is not directly observable. Recent papers strive to overcome these problems using endogenous sample separation methodology (Hovakimian and Titman, 2006, Hobdari et al, 2009). The advantage of this approach is that the likelihood of a firm to be financially constrained is endogenously determined by multiple firm characteristics, so that firm is not fixed in one regime over time. Therefore, a firm switches the regime when its propensity of being in the constrained or in the unconstrained regime reaches a certain unobservable threshold value.

It is necessary to stress that the literature on credit constraints is mostly focused on the relation between financing availability and investments. The

effect of credit constraints on the firms' capital structure choice has not been studied.[61] This paper contributes to the academic literature in the following ways. First, the paper studies how the financial constraints affect capital structure of the firm and its determinants using endogenous sample separation approach. Leverage of constrained firms appeared to be more dependent on such determinants as size of the firm, its tangibility and industry median leverage, while leverage of unconstrained firms is responsive to macroeconomic factors, because they are able to adjust their capital structures in accordance with economic changes. Second, the paper documents systematic differences in the speed of adjustment to target leverage between financially constrained and unconstrained firms. Constrained firms adjust their leverage to the optimal level faster than unconstrained ones. This finding might seem counterintuitive however firms change their capital structures only when they are sufficiently far away from the target. Since unconstrained firms have more financial freedom they do not drift away from their targets, while constrained firms usually underlevered and adjust to their targets when they have an opportunity to do so.

3. Data

I consider non-financial firms over the 1996-2006 period with data available from Amadeus database constructed by Bureau Van Dijk. In this study I use the Top 250,000 companies module of this database and focus on seven Eastern European countries, which are the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovakia.

I require that all the key variables have non-missing data. In addition, I exclude observations if: a) capital is negative; b) leverage does not fall into the interval from one to zero; and c) the trade credit is greater than the sum of current and noncurrent liabilities.[62] The resulting sample is unbalanced and consists of 51621 observations over the period 1996-2006.

Table 1 presents detailed summary statistics for all firms in the sample. The definitions of all variables are given in Appendix. It can be seen from the table that the mean of total assets of firms in the sample increases over the years from 33.9 to 54.5 million dollars. However, median total assets are much lower compared to their mean value implying that total assets of only few firms are large. Tangibility of firms in the sample decreases over time, while profitability stays approximately the same. Interesting, mean firms'

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[61] To my knowledge there is only one paper by Korajczyk and Levy (2003), which studies how macroeconomic conditions affect capital structure choice. The authors conduct their analysis separately for financially constrained and unconstrained firms and find that unconstrained firms, in contrast to constrained, time their issue choice when macroeconomic conditions are favorable.

[62] In this case, according to the leverage definition, the numerator will be negative. For more details see Appendix.

leverage decreases with years suggesting lower usage of debt in financing firms' activities.

Table 2 summarizes relevant variables by countries. According to the table, the Czech Republic and Poland have the greatest coverage, while Lithuania has the lowest coverage. At the same time, in terms of total assets, the largest companies are located in Poland and Slovak Republic, but Lithuania again has the lowest mean total assets. Polish firms have the highest tangibility, while Estonian and Latvian firms enjoy highest returns on assets. Firms in Hungary have the greatest growth opportunities and highest leverage. The average age of firms in the sample is about 10 years.

4. Switching Regression Model

The standard empirical specification of the model can be summarized as follows

$$\text{Leverage}_{ijt} = f(\text{control variables}_{ijt-1}) + \varepsilon_{ijt}, \tag{1}$$

where i stands for the firm, j stands for the country and t refers to the time period. Leverage is defined as debt over debt plus equity, where debt is equal to total liabilities minus trade credit.[63] Control variables contain the size of the firm proxied by logarithm of total assets, tangibility defined as tangible assets over total assets, profitability is profit over total assets, growth opportunities are proxied by GDP, expected inflation, maturity of assets defined as current assets to total assets, age of the firm and median industry leverage.

However, the model itself does not take into account that a firm could be heavily dependent on external finance availability or, in other words, could be financially constrained. As has been discussed above, most of prior studies start with dividing firms into groups (constrained and unconstrained) and then estimate parameters of interest separately for each subsample. However, Moyen (2004) demonstrates that a prior assignment of a firm into a particular group is quite subjective and the results depend on the separation criterion applied. Alternatively, application of the switching regression model with unknown sample separation allows allocating the observational units to a specific regime depending on the value of the latent decision variable relative to the threshold value Maddala and Nelason (1994). The method was used by Hu and Schiantarelli (1998), Hovakimian and Titman (2006), Almeida and Campello (2007), Hobdari et al (2009) to estimate investment-cash flow sensitivities without *a priori* classifying firms as constrained and unconstrained.

I assume that a firm could either work in a constrained or unconstrained regime, but the points of structural change are not observable and will be

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[63] In this case, according to the leverage definition, the numerator will be negative. For more details see Appendix.

estimated together with the leverage equation for each regime. Thus, the model is composed of the system of three equations estimated simultaneously:

$$Y_{1ijt} = \beta_1 X_{ijt} + \varepsilon_{1ijt},$$
$$Y_{2ijt} = \beta_2 X_{ijt} + \varepsilon_{2ijt},$$
$$y^*_{ijt} = \delta Z_{ijt} + u_{ijt},$$

(2)

where Y_{ijt} is leverage of firm i in country j at time t, X_{ijt} are leverage determinants, and ε is a random error term. First two equations in the system of equations (2) are leverage regressions for constrained and unconstrained regimes, and selection equation $y^*_{ijt} = \delta Z_{ijt} + u_{ijt}$ estimates the likelihood of the firm to operate in either one regime or another. Z_{ijt} contains the determinants of a firm's propensity of being in either regime at time t. The change of the regime occurs when y^*_{ijt} reaches a certain unobservable threshold value. So that status of the firm may change over time.

The selection rule is defined as

$$Y_{ijt} = Y_{1ijt}, \quad \text{iff } y^*_{ijt} < 0,$$
$$Y_{ijt} = Y_{2ijt}, \quad \text{iff } y^*_{ijt} \geq 0.$$

(3)

The parameters β_1, β_2 and δ will be estimated using maximum likelihood. It is necessary to assume that ε_{1ijt}, ε_{2ijt} and u_{ijt} are jointly normally distributed with zero mean and covariance matrix Σ.

$$\Sigma = \begin{pmatrix} \sigma_1^2 & \sigma_{12} & \sigma_{1u} \\ \sigma_{21} & \sigma_2^2 & \sigma_{2u} \\ \sigma_{u1} & \sigma_{u2} & \sigma_u^2 \end{pmatrix},$$

where σ_u^2 is normalized to 1, because from the switching regression it is only possible to estimate δ/σ_u, but not δ and σ_u separately. I also assume that off-diagonal terms (the covariances) are not equal to zero, although σ_{12} is not estimable since it does not appear in the likelihood function (equation 6). Still the non-zero covariance assumption is needed to allow the shocks of leverage to be correlated with the shocks to a firm's characteristics. This assumption is particularly important because Y_{1ijt} and Y_{2ijt} are included in y^*_{ijt} regressors meaning that they affect the classification of observations in the regimes. As σ_{1u} and σ_{2u} are different from zero, the switch is endogenous, thus, the endogenous switching model with unknown sample separation should be applied.

As the regime the firm in is not directly observable, I calculate the probabilities of the firm to be constrained or unconstrained:

Prob ($Y_{ijt} = Y_{ijt}^{UC}$) = Prob ($\delta Z_{ijt} + u_{ijt} < 0$) = Prob ($u_{ijt} < -\delta Z_{ijt}$) =

$\Phi(-\delta Z_{ijt})$,

Prob ($Y_{ijt} = Y_{ijt}^{C}$) = Prob ($\delta Z_{ijt} + u_{ijt} \geq 0$) = Prob ($u_{ijt} \geq -\delta Z_{ijt}$) =

$1 - \Phi(-\delta Z_{ijt})$. (4)

Then the likelihood density function for each observation Y_{ijt} is given by

$$l_{ijt} = \Phi(-\delta Z_{ijt})\phi(\varepsilon_{1ijt} \mid u_{ijt} < -\delta Z_{ijt}) + [1 - \Phi(-\delta Z_{ijt})]\phi(\varepsilon_{2ijt} \mid u_{ijt} \geq -\delta Z_{ijt}).$$ (5)

And the log-likelihood function for all the observations subject to maximization is given by

$$\ln L = \sum_{i=1}^{N}\sum_{j=1}^{M}\sum_{t=1}^{T}\ln\left\{\Phi\left(\frac{-\delta Z_{ijt} - \frac{\sigma_{1u}}{\sigma_1^2}\varepsilon_{1ijt}}{\sqrt{1 - \frac{\sigma_{1u}^2}{\sigma_1^2}}}\right)\phi(\varepsilon_{1ijt}, \sigma_1) + \left[1 - \Phi\left(\frac{-\delta Z_{ijt} - \frac{\sigma_{2u}}{\sigma_2^2}\varepsilon_{2ijt}}{\sqrt{1 - \frac{\sigma_{2u}^2}{\sigma_2^2}}}\right)\right]\phi(\varepsilon_{2ijt}, \sigma_2)\right\}$$

(6)

where $\phi(\cdot)$ is the normal density distribution and $\Phi(\cdot)$ is normal cumulative distribution functions.

I start with firm-specific factors which could be associated with the presence of financial constraints. The switching regression approach allows using multiple variables to predict whether a firm is constrained or unconstrained.[64] Following the existing investment literature I bring the sets of variables including those used by Hovakimian and Titman (2006), Almeida and Campello (2007), and Hobdari et al (2009), to identify financial constraints in the context of transition economies. Table 3 briefly summarizes the determinants I find to be relevant for firms operating in transition economies and their expected signs. All these variables are included into the selection equation in lagged form.

The next step is the estimation of the endogenous switching regression model with unknown sample separation. The model is estimated by maximum

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[64] The literature on financing conditions demonstrates that the obtained results depend on the a-priori criteria used to assign a firm to a particular category (Schiantarelli, 1995). Using the multiple indicators helps to assess the existence of credit constraints more carefully.

likelihood. As recent research revealed the necessity to control for firm-specific fixed effects (Lemmon et al, 2008), the leverage regressions are estimated in first differences. I also include year dummies to control for fixed-year effects. The model is estimated over 1996-2006 period.

Table 4 presents the regression results. Panel A demonstrates that the firms' capital structure decisions are different in the two regimes. These differences are particularly well pronounced for size, profitability and tangibility of the firm and also for the effect of industry median leverage. In both regimes size of the firm and industry median leverage are positively related to leverage. However, the change in size of the firm generates a greater increase in leverage of unconstrained firms. Industry median leverage has significantly higher impact on the leverage of constrained firms. The possible explanation of this fact is that constrained firms have a few opportunities to borrow, thus, they are striving to adjust their leverage to the median industry leverage, while unconstrained firms may focus on their own target level rather than the common benchmark. Note that the age of the firm is a highly significant determinant of capital structure of the firm. It is negatively related to the leverage of constrained and unconstrained firms indicating that old firms prefer to finance their activities by themselves. Profitability also has a highly significant negative effect on the leverage. Under large information asymmetries between firms and financial institutions, banks may use high interest rates to protect themselves, though profitable firms will choose to use their internal sources and demand less credit, while less profitable firms still have to borrow, since they lack internal alternatives. This negative relation is consistent with the pecking order theory and supported by previous findings for small firms (Pendado and Torre, 2006, Heyman et al, 2008) and for transition economies (Haas and Peeters, 2006, Delcoure, 2007, Shamshur, 2009).

Change in maturity of assets appears to have a different impact on constrained and unconstrained firms. It has positive impact on leverage of constrained firms, while leverage of unconstrained firms and maturity of assets have negative relations. According to Hol and Wijst (2008), this could be interpreted as evidence of short-term debt usage by constrained firms and long-term debt usage by unconstrained firms. As long-term debt entails higher information costs than short-term debt because a stronger proof of creditworthiness is needed, the only unconstrained firms could obtain it.
As expected, tangibility is significant only for a subsample of constrained firms: higher tangibility is associated with higher leverage. This finding is quite intuitive because financial institutions consider tangible assets as collateral. Moreover, such macro factors as GDP and expected inflation significantly affect leverage of unconstrained firms indicating that these firms are able to adjust their leverage in response to economic changes. All firm-specific estimates are significantly different between two regimes.

The estimates of the selection equation are reported in Panel B. All the characteristics except long-run leverage and firm status (public/private) play

an important role in determining the likelihood of the firm belonging to a particular regime. Constrained firms tend to be smaller and younger, have less tangible assets and lower leverage levels. They also have higher growth opportunities and lower levels of financial slack. Lower short-run leverage levels indicate that these firms are not able to borrow as much as necessary even if they face higher growth opportunities. Unexpectedly, soft budget constraints are positively correlated with probability of firm being financially constrained. The obtained result could be connected to the fact that the financing firms receive from government in the form of direct government subsidies without expectation of future repayment or in the form of tax reduction, trade credits and cheap bank credits is mostly used for survival rather than investment, restructuring or optimizing capital structure (Grosfeld and Roland, 1997, Konings et al, 2003, Lizal and Svejnar, 2002). Moreover, during the transition period new EU member countries had tightened their policies with respect to government subsidies. Moreover, in line with Hobdari et al (2009), it can be concluded that the governmental subsidies are used inefficiently.

The obtained results seem to support the idea of the existence of two different regimes. In order to formally test this preposition I estimate a pooled OLS model which could be considered as the constrained model in the sense that coefficients of two leverage regressions for two different regimes are equal. The results are summarized in Table 5 and Figure 7. In most cases the estimates of pooled OLS model are between constrained and unconstrained regimes coefficients. In general, the pooled OLS estimates are closer to the constrained firms' estimates from the switching regression. Furthermore, I use a likelihood ratio test with likelihood values for the switching model and OLS. Under the restriction that coefficients of the two leverage equations for two different regimes are equal, the parameters of the selection equation in the switching model are not identified, which complicates the calculation of the degrees of freedom. I follow the suggestions of Goldfeld and Quandt (1976) and use χ^2 distribution to conduct a likelihood ratio test by defining the degrees of freedom as the sum of the number of constraints and the number of unidentified parameters. There are 38 degrees of freedom in my model. The critical value of χ^2 distribution at 1% level with 38 degrees of freedom is 61.16 and the value of the likelihood ratio test is 9656.9. Thus, I conclude that the data are better characterized by two different regimes (constrained and unconstrained) than by one regime.

To test the robustness of the results I estimate the separate leverage regressions using a priori classification of the sample into subsamples of constrained and unconstrained firms. Estimations are performed separately for each regime.

[A.] In every year over 1996-2006 period firms are sorted into subsamples based on growth opportunities they face and financial slack they have: firms

that face high (low) growth opportunities and keep low (high) amount of cash are classified as financially constrained (unconstrained).

[B.] In every year over 1996-2006 period firms are ranked based on their tangibility and profitability. Firms which are in the bottom (top) three deciles of tangibility and profitability distributions are assigned to financially constrained (unconstrained) group.
The results from these estimations are reported in Table 5. In general, they are similar, but substantially weaker. The potential problem with artificial sample separation is that assignment of a firm into a particular group is based on one or two variables, while many factors affect the ability of the firm to attract external financing.

5. Do constrained and unconstrained firms adjust their capital structures differently?

In this section I attempt to analyse the differences in the adjustment speed between constrained and unconstrained firms. As I have shown the determinants of capital structure differ across firms with respect to their access to external finance. When the switching model is estimated, the obtained results can be used to calculate the probabilities of the firm to be in either the constrained or unconstrained regime. These probabilities help to assign firms in either one group or another and then estimate the dynamic capital structure model for each group separately.

I employ a partial adjustment model with firm fixed effects as suggested by Flannery and Rangan (2006). The authors demonstrate that this type of model fits the data very well.

First, the target leverage of the firm must be estimated.

$$Y_{ijt}^* = \beta X_{ijt-1} + \nu_i \,,$$

(7)

where Y_{ijt}^* is a target or optimal leverage of the firm, vector X_{ijt-1} contains one-year lagged leverage determinants found to be important in transition economies. Specifically, I include size of the firm, its age, maturity of assets, tangibility, profitability, GDP, expected inflation and industry median leverage.[65] Firms' fixed effects (ν_i) included into regression to capture an unobserved firms' heterogeneity documented by Lemmon et al (2008) for the US and Shamshur (2009) for Central and Eastern European economies.

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[65] For the detailed discussion concerning leverage determinants and their expected relationship with target leverage see Haas&Peeters (2006), Shamshur (2009).

Second, to capture dynamic adjustments in leverage ratios, the partial adjustment model will be estimated (Hovakimian et al, 2001, Flannery and Rangan, 2006).

$$Y_{ijt} - Y_{ijt-1} = \lambda(Y_{ijt}^* - Y_{ijt-1}) + \varepsilon_{ijt} ,$$

(8)

where $Y_{ijt} - Y_{ijt-1}$ is an actual change in firm's leverage, $Y_{ijt}^* - Y_{ijt-1}$ is a distance between firm's leverage and its target leverage, and λ captures the speed of adjustment to the target leverage ratio.
Combining (7) and (8) I get

$$Y_{ijt} = (\lambda\beta)X_{ijt} + (1-\lambda)Y_{ijt-1} + \lambda v_i + \varepsilon_{ijt} .$$

(9)

When estimating equation (9) several econometric problems might be faced. First, firm fixed effect should be taken into account because time-invariant firm characteristics are more likely correlated with the explanatory variables. Ignoring the unobserved firm heterogeneity may cause the estimates to be biased and inconsistent (Wooldridge, 2002). Second, the presence of lagged dependent variable in the regression equation makes the inclusion of firm fixed effect into the model problematic. If first-differencing is applied, the firm-, industry- and country-specific effects are removed, because they do not vary over time, however, this kind of transformation creates a correlation between the transformed lagged dependent variable and the error term. The degree of inconsistency from using the fixed effect when the strict exogeneity assumption fails is of order T^{-1} (Wooldridge, 2002). In panels with large time dimension the correlation of the error term with the lagged dependent variable will be insignificant (Roodman, 2006), however, my dataset has a short time dimension and a large firm dimension, thus, bias will be substantial (Wooldridge, 2002, Baltagi, 2005).

The short panel bias could be addressed in a number of ways. The most common way to deal with the problem is to instrument the lagged dependent variable with an appropriate instrumental variable (IV). This approach is employed by Flannery and Rangan (2006) to estimate the speed of adjustment to the target leverage. The authors use a lagged book debt ratio to instrument the lagged dependent variable which is the market debt ratio. Unfortunately, this instrument is not applicable in my case because the majority of firms in my panel is private and market leverage ratio cannot be calculated for them.

Another way to address the short panel bias problem is to apply the Arellano-Bond estimator which has been designed for small-t large-n panels (Wooldridge, 2002). This Generalized Method of Moments (GMM) estimator uses lag levels to instrument for the first differences of endogenous variables, but Blundell and Bond (1998) emphasize that with highly persistent data first-differenced IV or GMM estimators may suffer of the

small sample bias due to weak instruments. Blundell and Bond system GMM estimator is designed for persistent panel data and in addition to the lagged level observations uses lagged first differenced observations as instruments for the levels variables. One set of instruments deals with endogeneity of explanatory variables and another set with the correlation between lagged dependent variable and the error term. At the same time, according to Baltagi (2005), the GMM coefficient estimates are only consistent in the absence of second order serial correlation in the differenced residuals. Given that there is no second order serial correlation in my data, I estimate equation (9) in first differences using GMM and use the levels of all independent variables at the second lag as instruments.

The dynamic panel estimation results are reported in Table 6. The estimated speed of adjustment is different for constrained and unconstrained firms, 56% (1-0.44) and 17% (1-0.83) respectively. Surprisingly, constrained firms adjust substantially faster towards their targets. This finding is consistent with Leary and Roberts (2005) who argue that firms tend to make adjustments of their capital structure relatively infrequently since adjustment is not costless for them. As unconstrained firms are able to borrow relatively easy they do not drift far away from their targets, while constrained firms have to wait for the opportunity to issue debt, they cannot hasten or postpone the adjustment. The idea is also supported by the finding discussed above concerning the higher sensitivity of unconstrained firms' leverage to macroeconomic variables (GDP growth and inflation). Therefore, further investigation of what determines the speed of adjustment and why constrained firms adjust faster is needed, though they are beyond the focus of this paper.

6. Conclusion

The paper analyses capital structure determinants of financially constrained and unconstrained firms for a panel of Central and Eastern European firms during 1996-2006 using the endogenous switching regression model with unknown sample separation. The major advantage of this approach is that it allows to avoid misspecification because the sample separation is determined endogenously based on the set of variables, rather than a single classification criterion. The findings provide strong evidence that differences in financing constraints have a significant effect on firms' capital structure. First, the existence of two separate regimes is confirmed: financially constrained and unconstrained firms differ in the capital structure determinants. Specifically, tangibility appears to be a very important leverage determinant for financially constrained firms as well as size of the firm and industry medial leverage, while macroeconomic factors (GDP and expected inflation) affect the leverage level of unconstrained firms suggesting that those firms change their capital structure in response to changes in macroeconomic conditions.

Second, the endogenous switching approach allows me to calculate probabilities of firms being financially constrained. Using calculated probabilities I separate firms to financially constrained and unconstrained to study how the financial constraints affect the speed of adjustment to the target capital structure. The paper documents systematic differences in the speed of adjustment to target leverage between financially constrained and unconstrained firms. Apparently, constrained firms adjust their leverage to the optimal level faster than unconstrained ones. Future research should probably consider the determinants of the adjustment speed for these two groups of firms. Existing evidence suggests that firms that are further away from their targets adjust more readily. Perhaps, constrained firms wait until they are sufficiently far from target before starting the adjustment (the adjustment itself is assumed to be more costly as they have restricted access to credit markets) and then adjust rapidly. Moreover, the speed of adjustment of unconstrained firms might be more sensitive to macroeconomic or business cycle variables.

Hence, given documented differences in capital structure determinants and adjustment speed to target leverage of constrained and unconstrained firms, it can be concluded that access to financial markets affects capital structure decisions of firms, although further investigation of adjustment speed determinants for both groups of firms is needed.

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Appendix

$$Leverage = \frac{debt}{debt + equity},$$ where

$$debt = total\ liabilities - trade\ credit$$

Short-run leverage = short-term debt/total assets
Long-run leverage = long-term debt/total assets
GDP growth is a proxy for growth opportunities of the firm.
Age=Log(Year$_t$ - year of incorporation).
Log(total assets) is the natural logarithm of the total assets.
Tangibility=tangible assets/total assets.
Profitability = profit/total assets.
Maturity of assets = current assets/total assets.
Growth opportunities is the percentage change in total assets from the previous to the current year.
Median industry leverage is measured as the median leverage of the group defined by the industry code (NACE double digit) and by year.
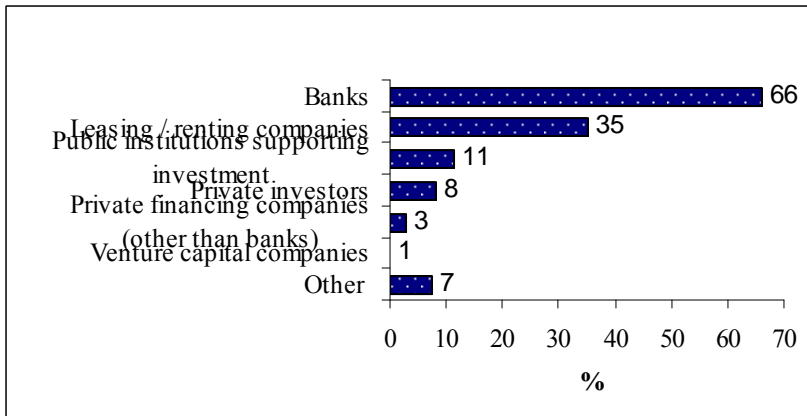*Quoted*=1 if the firm is listed and =0 if the firm is private.

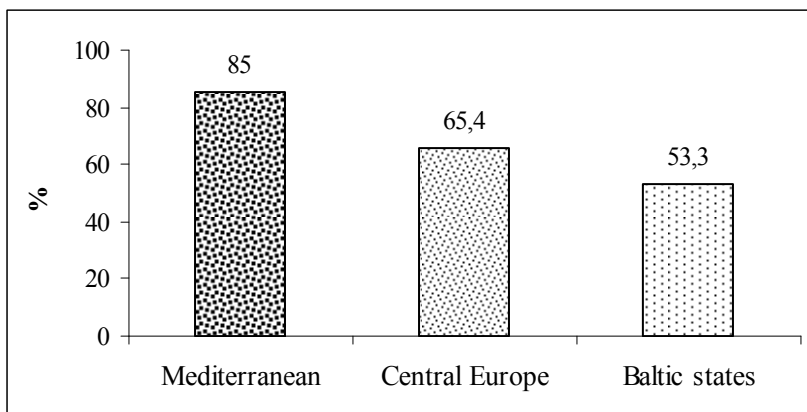**Figure 1. Institutions firms go to obtain financing**

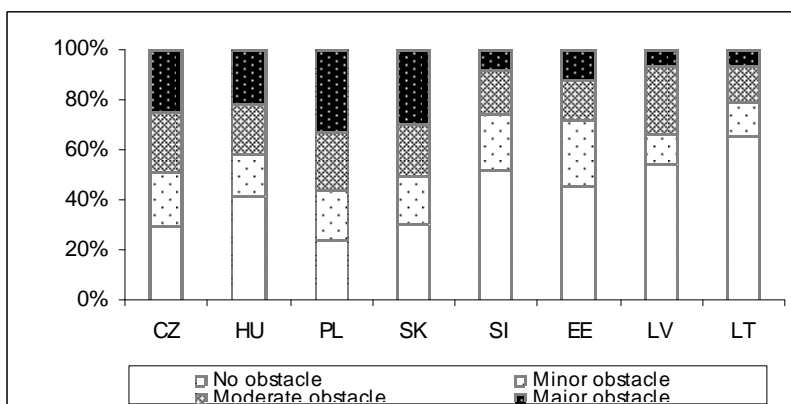**Figure 2. % of firms in new EU-10 countries that go to banks to obtain financing by regions**

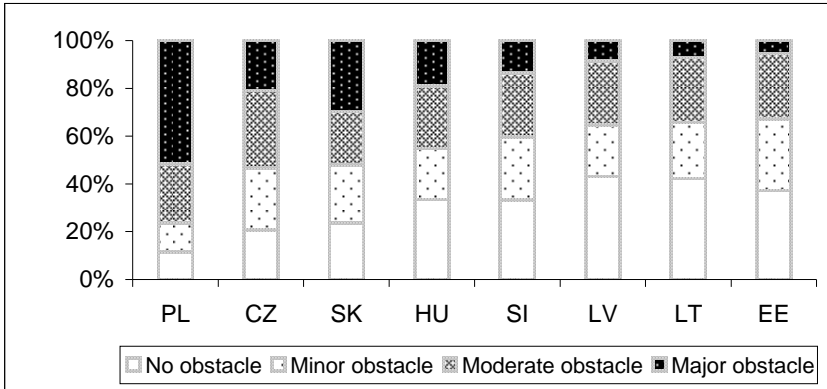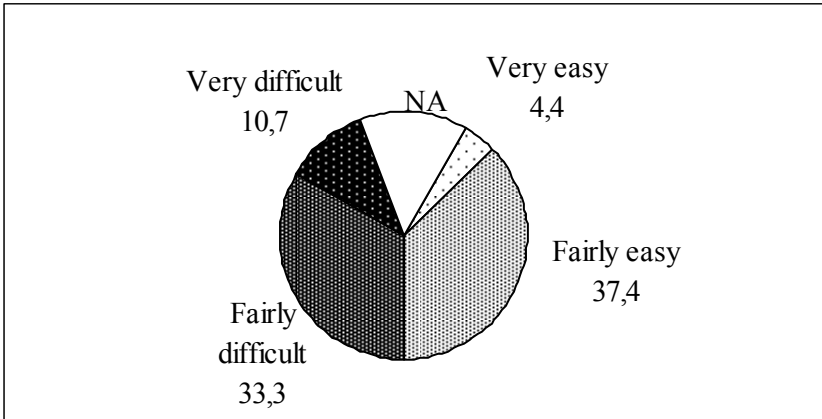**Figure 3. Access to financing by countries**

Figure 4. Cost of financing by countries

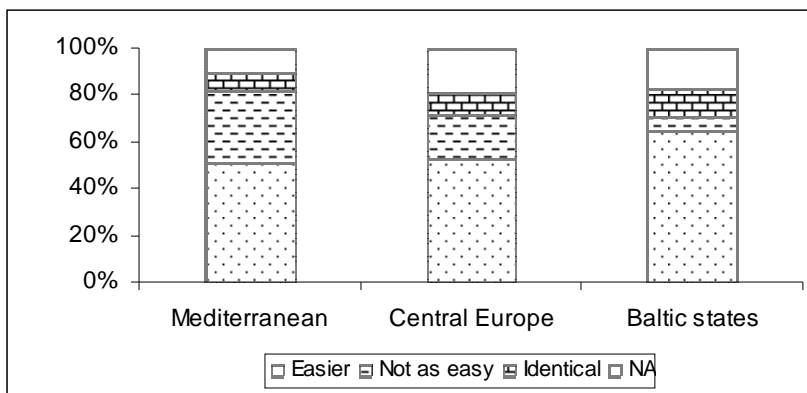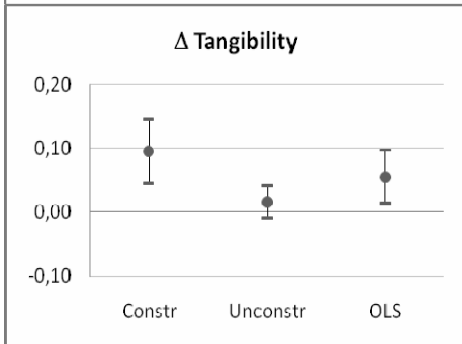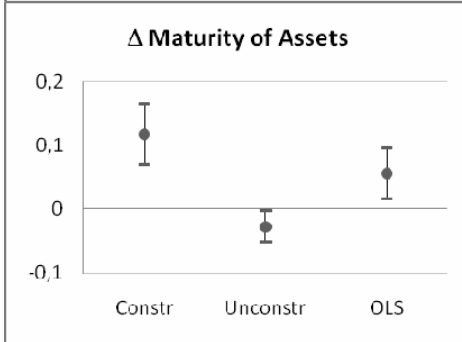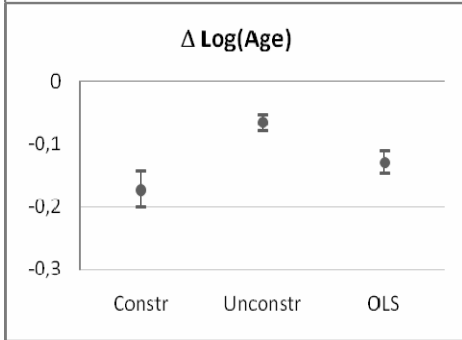**Figure 5. Access to finance through banks in new EU-10 countries**

Figure 6. Changes in access to finance through banks

Δ Log(Total Assets)

Δ Log(Age)

Δ Maturity of Assets
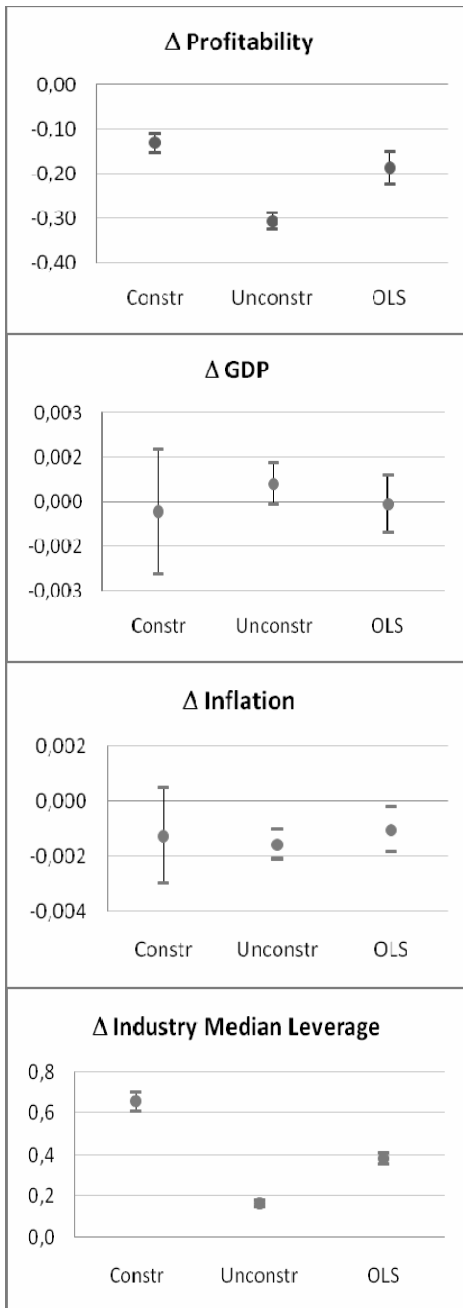
Δ Tangibility
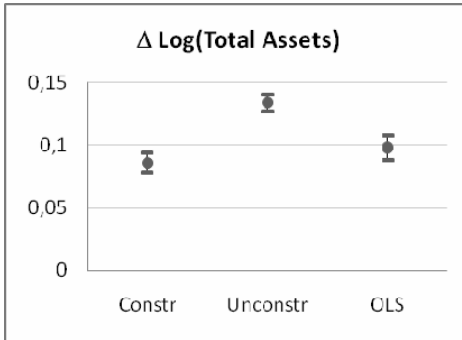
Figure 7: Differences in coefficients

Table 1. Descriptive statistics of principal variables over time

		Years											Obs
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Total Assets	Mean	33.9	28.3	31.9	28.1	24.3	25.4	33.2	38.4	48.2	45.5	54.5	51621
	St. dev.	247.2	210.6	213.4	264.9	155.8	161.3	217.5	238.1	294.1	277.9	285.3	
Age	Mean	8.99	9.44	11.39	11.38	12.49	12.89	14.04	14.94	15.70	16.58	14.35	51621
	St. dev.	18.09	17.61	19.81	17.99	19.02	18.12	18.63	18.31	17.79	16.89	10.30	
Maturity of assets	Mean	0.53	0.54	0.53	0.54	0.55	0.55	0.54	0.55	0.55	0.56	0.60	51621
	St. dev.	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	
Tangibility	Mean	0.44	0.42	0.43	0.42	0.41	0.41	0.41	0.40	0.40	0.39	0.36	51621
	St. dev.	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	
Profitability	Mean	0.10	0.12	0.12	0.10	0.09	0.09	0.09	0.09	0.09	0.08	0.10	51621
	St. dev.	0.13	0.22	0.18	0.19	0.13	0.13	0.11	0.10	0.10	0.10	0.11	
Financial Slack	Mean	0.01	0.01	0.12	0.13	0.15	0.21	0.12	0.10	0.09	0.08	0.05	44836
	St. dev.	0.03	0.10	0.99	1.07	1.13	4.02	0.80	0.70	0.60	1.07	0.50	
Growth Opportunities	Mean	1.28	1.03	1.74	1.30	1.22	1.33	1.65	1.39	1.45	1.35	1.33	44910

	St. dev.	1.02	0.56	24.55	11.88	2.72	3.54	17.81	1.08	2.24	18.81	0.56	
Short-run Leverage	Mean	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.08	0.08	0.08	51621
	St. dev.	0.12	0.11	0.12	0.12	0.11	0.11	0.10	0.11	0.11	0.11	0.11	
Long-run Leverage	Mean	0.06	0.06	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.08	51621
	St. dev.	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.13	
Leverage	Mean	0.50	0.49	0.48	0.48	0.47	0.46	0.43	0.43	0.41	0.41	0.42	51621
	St. dev.	0.27	0.26	0.25	0.25	0.25	0.25	0.24	0.24	0.23	0.23	0.23	

Table 2. Summary statistics of principal variables by countries.

		Countries						
		Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Slovak Republic
Total Assets	Mean	32.1	16.4	26.2	13.9	14.6	60.9	39.5
	St. dev.	217.32	70.32	201.48	63.71	50.58	354.41	200.29
Age	Mean	9.4	12.4	8.5	8.1	7.8	29.6	11.4
	St. dev.	5.96	16.05	4.41	3.23	3.36	33.16	11.73
Maturity of assets	Mean	0.56	0.55	0.57	0.61	0.56	0.47	0.53
	St. dev.	0.24	0.27	0.22	0.21	0.25	0.23	0.24
Tangibility	Mean	0.40	0.35	0.39	0.34	0.39	0.47	0.42
	St. dev.	0.24	0.26	0.22	0.21	0.25	0.24	0.24
Profitability	Mean	0.09	0.12	0.11	0.10	0.12	0.08	0.08
	St. dev.	0.12	0.12	0.22	0.10	0.13	0.10	0.10
Financial Slack	Mean	0.004	1.94	0.03	0.24	0.06	-0.01	0.004

	St. dev.	0.01	6.56	0.55	0.41	0.11	0.72	0.01
Growth Opportunities	Mean	1.39	1.60	1.74	1.43	1.36	1.22	1.25
	St. dev.	14.67	5.49	19.38	0.64	1.04	0.58	1.34
Short-run Leverage	Mean	0.07	0.08	0.07	0.10	0.09	0.10	0.07
	St. dev.	0.11	0.12	0.12	0.11	0.12	0.11	0.10
Long-run Leverage	Mean	0.06	0.10	0.01	0.10	0.12	0.08	0.06
	St. dev.	0.12	0.15	0.04	0.13	0.16	0.11	0.12
Leverage	Mean	0.44	0.38	0.52	0.40	0.42	0.45	0.44
	St. dev.	0.25	0.25	0.23	0.22	0.26	0.22	0.25
Obs		22323	2692	7214	1730	3829	10483	3350

Table 3. Sample Separation Criteria

Criteria	Expected effect	Reference
Size	Negative effect	Hovakimian and Titman (2006) Myers and Majluf (1984) Oliner and Redebusch (1992) Hobdari et al. (2009) Almeida and Campello (2007)
Age	Negative effect	Hovakimian and Titman (2006) Hobdari et al. (2009) Almeida and Campello (2007)
Leverage	Positive effect	Hovakimian and Titman (2006) Hobdari et al. (2009) Almeida and Campello (2007) Myers (1977) Jensen and Meckling (1976)
Financial Slack	Positive/Negative effect	Kaplan and Zingales (1997) Fazzari et al. (2000) Hovakimian and Titman (2006)

		Almeida and Campello (2007)
Growth Opportunities	Positive effect	Almeida and Campello (2007) Hovakimian and Titman (2006)
Tangibility	Negative effect	Almeida and Campello (2007)
Soft budget constraints	Negative effect	Hobdari et al. (2009)
Quoted	Negative effect	Brav (2009)
Firm-specific interest rate[a]	Positive effect	Haas and Peeters (2006)
Majority foreign ownership[b]	Negative effect	

[a] Although a firm-specific interest rate is a valid determinant of the financial constraints because it proxies for the external finance premium firms face, it is not included to the final specification of the model. The reasoning under this decision is twofold. First, the inclusion of firm-specific interest rate calculated as [100*$total\ interest\ paid$/($long$-$term\ debt\ plus\ loans$)] does not substantially affect the results. Second, the inclusion of the firm-specific interest rate to the model significantly reduces the number of observations in the sample because the interest paid is missing for 2/3 of firms in the sample.

[b] I used the indicator of foreign majority ownership to control for the firms' opportunities to obtain financing through the channels different from debt or equity issuing that might not. The obtained results are qualitatively unaffected therefore are not reported.

Table 4. An endogenous switching regression model with unknown sample separation.

Panel A. Leverage regressions					
	Constrained		Unconstrained		Differences in coefficients (*p-value*)
Log(Total Assets)	0.09***	(0.004)	0.13***	(0.003)	0.000
Log(Age)	-0.17***	(0.014)	-0.07***	(0.006)	0.000
Maturity of Assets	0.12***	(0.024)	-0.03**	(0.012)	0.000
Tangibility	0.10***	(0.026)	0.02	(0.013)	0.010
Profitability	-0.13***	(0.011)	-0.31***	(0.009)	0.000
GDP	-0.0003	(0.001)	0.001*	(0.0004)	0.424
Expected inflation	-0.001	(0.001)	-0.002***	(0.0003)	0.748
Industry median	0.66***	(0.024)	0.17***	(0.009)	0.000

Panel B. The Selection equation		
const	2.01***	(1.157)

Log(Total Assets)	-0.17***	(0.023)
Log(Age)	-0.22***	(0.054)
Tangibility	-2.38***	(0.172)
SBC	0.46***	(0.137)
Short-run Leverage	-3.04***	(0.608)
Long-run Leverage	-0.17	(0.610)
Financial Slack	-0.05*	(0.044)
Growth Opportunities	0.27***	(0.070)
Quoted	0.04	(0.189)
Obs	37591	

Note: The table reports parameter estimates from endogenous switching regression model with unknown sample separation. The book leverage regressions are estimated in first differences and include year dummies to control for fixed-year effects. Leverage is defined as debt over debt plus equity, where debt is equal total liabilities minus trade credit. Tangibility is defined as tangible assets to total assets. Profitability is equal to profit over total assets. Maturity of assets is current assets over total assets. Median industry leverage is measured as the median leverage of the group defined by the industry code (NACE double digit) and by year. The selection equation is estimated by probit model, where the dependent variable is an indicator taking value of one for firms

classified as financially constrained and zero for firms classified as financially unconstrained. All independent variables are one-year lagged. Firm is assumed to face soft budget constraints if it is not profitable, but receives positive net bank financing. Short-run leverage and long-run leverage are defined respectively as short-term debt and long-term debt over total assets. Financial slack is calculated as cash over 1-year lagged total assets. Growth opportunities are proxied by the percentage change in total assets from the previous to the current year. Quoted is a dummy variable for listed firms.

The *p*-values for the coefficient differences in two regimes are based on the Wald test.
***, **, and * denote statistical significance at the 1%, 5%, and 10% level correspondingly

Table 5. Pooled OLS vs. Endogenous switching regression model with unknown sample separation.

| | Pooled OLS | | Switching regression | | | |
			Constrained		Unconstrained	
Log(Total Assets)	0.10***	(0.005)	0.09***	(0.004)	0.13***	(0.003)
Log(Age)	-0.13***	(0.009)	-0.17***	(0.014)	-0.07***	(0.006)
Maturity of Assets	0.06***	(0.020)	0.12***	(0.024)	-0.03**	(0.012)
Tangibility	0.06***	(0.021)	0.10***	(0.026)	0.02	(0.013)
Profitability	-0.19***	(0.019)	-0.13***	(0.011)	-0.31***	(0.009)
GDP	-0.0001	(0.0005)	-0.0003	(0.001)	0.001*	(0.0004)
Expected inflation	-0.001**	(0.0004)	-0.001	(0.001)	-0.002***	(0.0003)
Industry median	0.38***	(0.014)	0.66***	(0.024)	0.17***	(0.009)

Note: The table reports parameter estimates from pooled OLS model and endogenous switching regression model with unknown sample separation. The book leverage regressions are estimated in first differences and include year dummies to control for fixed-year effects. Leverage is defined as debt over debt plus equity, where debt is equal total liabilities minus trade credit. Tangibility is defined as tangible assets to total assets. Profitability is equal to profit over total assets. Maturity of assets is current assets over total assets. Median industry leverage is measured as the median leverage of the group defined by the industry code (NACE double digit) and by year.
***, **, and * denote statistical significance at the 1%, 5%, and 10% level correspondingly.

Table 6. Pooled OLS regression with *a priori* artificial sample separation

Leverage	Constrained		Unconstrained	
	Panel A.			
Log(Total Assets)	0.10***	(0.014)	0.10***	(0.019)
Log(Age)	-0.09**	(0.039)	-0.06*	(0.035)
Maturity of Assets	0.14	(0.084)	0.02	(0.053)
Tangibility	0.23**	(0.099)	0.05	(0.055)
Profitability	-0.38***	(0.060)	-0.08**	(0.029)
GDP	0.0075**	(0.003)	0.001	(0.001)
Expected inflation	-0.0005	(0.002)	-0.002	(0.003)
Industry median	0.27***	(0.062)	0.36***	(0.039)
Obs	2403		2269	
	Panel B.			
Log(Total Assets)	0.09***	(0.014)	0.15***	(0.019)
Log(Age)	-0.08**	(0.030)	-0.133***	(0.030)
Maturity of Assets	0.06	(0.042)	-0.10	(0.072)

Tangibility	0.05	(0.060)	0.03	(0.063)
Profitability	-0.17**	(0.070)	-0.07**	(0.033)
GDP	0.00161	(0.002)	-0.001	(0.001)
Expected inflation	-0.00235	(0.002)	0.000	(0.001)
Industry median	0.47***	(0.055)	0.28***	(0.042)
Obs	2837		2511	

Note: The table reports parameter estimates from pooled OLS model. Firms are artificially separated into constrained and unconstrained. The book leverage regressions are estimated in first differences and include year dummies to control for fixed-year effects. Leverage is defined as debt over debt plus equity, where debt is equal total liabilities minus trade credit. Tangibility is defined as tangible assets to total assets. Profitability is equal to profit over total assets. Maturity of assets is current assets over total assets. Median industry leverage is measured as the median leverage of the group defined by the industry code (NACE double digit) and by year.

***, **, and * denote statistical significance at the 1%, 5%, and 10% level correspondingly.

Table 7. Financial Constraints and Adjustment Speeds

	constrained		unconstrained	
Lag of Leverage	0.44***	(0.083)	0.83***	(0.041)
Log(Total Assets)	- 0.01	(0.050)	- 0.01	(0.031)
Log(Age)	0.06	(0.045)	0.04	(0.019)
Maturity of Assets	- 0.11	(0.249)	- 0.28	(0.366)
Tangibility	0.02	(0.328)	- 0.12	(0.337)
Profitability	- 0.02	(0.042)	0.08	(0.107)
GDP	- 0.002	(0.006)	- 0.001	(0.003)
Expected inflation	0.002	(0.003)	0.001	(0.001)
Industry median leverage	0.34***	(0.120)	0.18***	(0.057)
Wald test	125.52***		794.97***	
No 2nd order serial correlation	0.41		0.45	
Obs	2985		9547	
Firms	817		2108	

Note: The table reports parameter estimates from a partial adjustment model with firm fixed effects as suggested by Flannery and Rangan (2006). Firms are assigned to constrained and unconstrained categories using calculated probabilities of the firm to be in either

regime from the estimated switching model. The model is estimated in first differences using GMM, the levels of all independent variables at the second lag are used as instruments. The book leverage regressions are estimated in first differences and include year dummies to control for fixed-year effects. Leverage is defined as debt over debt plus equity, where debt is equal total liabilities minus trade credit. Tangibility is defined as tangible assets to total assets. Profitability is equal to profit over total assets. Maturity of assets is current assets over total assets. Median industry leverage is measured as the median leverage of the group defined by the industry code (NACE double digit) and by year.

***, **, and * denote statistical significance at the 1%, 5%, and 10% level correspondingly.

Marketing educational institutions - history and current situation in the present chaotic market environment

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Purpose: The purpose of this paper is preparation of comprehensive overview of the historical evolution, present situation and actual modern trends in the marketing of educational institutions with the main focus on the Czech market and the comparison of the development of the marketing of educational institutions in the Czech Republic with foreign experiences. The final part of the paper is dedicated to results of the author's marketing research of the websites of a sample of Czech and Slovak universities.

Research Methodology/Approach: Literature retrieval of the Czech and foreign literature, analysis and synthesis of the secondary data (internet, statistical data, etc.) and information obtained from the author's marketing research.

Findings: Marketing of educational institutions is still in its early stage. From the historical point of view the marketing of educational institutions passes through the similar development of the marketing conceptions, or the adoption of marketing in the institution like other branches before. Marketing of educational institutions is a really new branch in the Czech Republic. Till 1989 educational institutions and its marketing had been negatively marked by the communist regime, which made impossible any development of this sphere. In the Czech Republic the development of the marketing of education institutions which is analogous to the development of these institutions in the world after the Second World War started after so called "Velvet revolution" (17th November 1989 – the fall of the communist regime in the Czech Republic). First Czech authors started to pay attention to this sphere in the first half of the nineties. Unfortunately the complex processing of this problem in the Czech Republic is still missing. The growing numbers of universities in the Czech market and the unstable market environment which is full of chaos and unexpected turbulences, which are caused by the global economic crisis, contribute to the importance and topicality of this issue. The adoption of the strategic marketing tools, which was formerly typical for the commerce environment, is the primary premise for survival of educational institutions in the crisis environment. The present chaotic environment is therefore much more complicated for educational institutions, because they

are not prepared yet enough. Because of changes in the educational environment and market, educational institutions are forced to integrated recent modern trends, especially from the sphere of communication technologies and the internet into their communication mixes. This is the only way how to come through the market that until recently haven't contained any competitive fight elements. Results of the author's marketing research confirmed the importance of the internet for universities as an effective marketing communication tool. From the total number of 297 inquired respondents from 7 different faculties of the Czech and Slovak universities 50% stated that they use the website of their university once a day and 82% of respondents use websites three times a week.

Originality/value: The paper reacts on the actual situation at the market and problem, which complex processing in the Czech Republic is still missing.

Practical implications: Results obtained in this research are possible to involve in the communication mix of universities.

Keywords: Marketing, marketing communication, educational institution, internet, turbulence

1. Marketing of educational institutions

There were huge changes in the whole sphere of marketing in last decades. We can say that there are great changes within the scope of strategic marketing of educational institutions. The worldwide known authors - Davies, Kotler, Lockhart or Angela Hatton consider the marketing of educational institutions as the branch, which has been still developing.

In the field of education we still meet the phenomenon "Marketing myopia". Institutions are usually focusing on current curricula and their development regardless of market requirements. The key element of educational institutions' strategic marketing is the usage of accessible marketing tools and new trends in marketing communication to find the balance between the mission of educational institutions and market requirements in the chaotic environment. In the educational sphere, it is not possible to satisfy all market requirements, customers' needs and all "hot news" in the market. The education as a service carries characteristics of the public as well as private good. Therefore the market of educational institutions is referred to as so-called "market sui genesis". That means that this is a special market with unique specialities, where classic market mechanisms are slightly limited (no matter if this service is provided by the private or public institution). Therefore at the present time we still face the problem of malfunction of one of primary parameters of effectiveness in markets – the price.

2. Definition of marketing of educational institutions

It is not easy to find accurate definitions of marketing of educational institutions. Most of authors primary result from the general definition of marketing.

What do we exactly understand by the term "Marketing of the education institutions"?

Světlík (2006) states that "the marketing of the school is the process of management, which result is the understanding, interaction and at the final stage the satisfying of school's clients' needs and desires by the effective way that ensures institution meets its goals and aims at the same time". (p.18)

Kotler (2002) results by the defining of the marketing of educational institutions from his general definition of marketing that states: "Marketing is the analysis, planning, implementation, and control of carefully formulated programs designed to bring about voluntary exchanges of values with target markets to achieve institutional objectives. Marketing involves designing the institution's offerings to meet the target markets' needs and desires, and using effective pricing, communication and distribution to inform, motivate, and service these markets" (p.6).

Davies and Ellison (2003) define marketing of the educational institutions as "a way of doing things that express to students, parents, staff members, and the community that the school or district, as a public supported institution, is dedicated to serving the educational needs of the community to the highest degree possible" (p.1).

In the approach of Hatton and Sedgmore (1992) "Marketing is the philosophy of business, which is based on the belief that the key to survival in a competitive environment lies in the organisation's anticipating, identifying and satisfying the consumers' needs, profitably". (p.33)

Marketing of the education institutions is based on the presumption that the marketing is the key phenomenon for survival of educational institutions in the competitive environment. Marketing focuses on customers and tries to identify and satisfy needs and desires of key segments.

3. Historical evolution of marketing of the educational institutions

There was a huge expansion of public and private universities after the World War II. During these years the most of universities were overloaded by the enormous number of applicants. Universities could choose only the best candidates. There was an analogical development after the year 1989 in the Czech Republic. Unfortunately, the Czech universities were stigmatized, like other branches in the Czech Republic, by the communist regime. This is why the marketing of the educational institutions has started to develop more significantly in recent years. Lots of authors consider marketing of educational institutions as a new branch, however on the other hand we cannot simply say that the marketing is an absolutely unfamiliar discipline in the sphere of education, which has appeared in the fall of the Twentieth Century. Publications concerning exclusively with the marketing of the educational institutions have started to appear in the half of the Twentieth Century. One of the first authors, who focused on the marketing of the educational institutions from the historical point of view, was Scott Cutlip. According his approach it is possible to distinguish following stages in evolution of marketing of the educational institutions applied to enrolment.

1) **Marketing as unnecessary tool.** This stage was typical for the origin of the marketing of educational institutions. There was only small competition and most of the educational institutions consider the value of education as obvious that they consider marketing as insignificant and unimportant tool for the strategic management and planning. Educational institutions assumed that the value of their curricula was so obvious that it made their say to the school doors to enrol. Curricula of education institutions changed too slowly because they were based on the tradition proven by years, decades and centuries and persuasion that the university offers exactly what the target market wants. In the Czech Republic this stage can be assigned to the whole period of the communist regime and the beginning of the nineties.

2) **Marketing as propagation.** The second stage in the evolution of educational institutions' marketing is the concept of marketing as propagation. Marketing was only about enrolment. This stage is typical for the environment with increasing competition. In this stage the interest of students is decreasing, schools do not enrolling enough students, or enough high-quality students. Educational institutions started to use advertising, PR, sales promotion and mainly brochures. Marketing is usually understood as a tactical tool in the form of advertising, publicity, or marketing research. This stage is based on these tactical, short term tools, not on strategic marketing decisions and focus on customers. From the point of view of marketing concept, we can consider this stage as a selling concept.

3) **Marketing as segmentation, marketing research and innovation.** At later stage educational institutions realize that sources spent on the enrolment of students can be used more effectively if they directly target the most attractive stakeholders. This stage is connected with

segmentation of the target market. The educational institutions should be able to provide the right information at the right place and time. Educational institutions consider students as clients and the marketing is not focused only on curricula as products, but primarily on needs and desires of students. The movement towards innovations is stimulated by the need of realizing profit. Educational institutions focus on modified offers, shorter and retraining courses, continuing (lifelong) education.

4) **Marketing as positioning.** The more educational institutions use marketing tools, the more realize that it is not enough to carry out segmentation, marketing research, promotion, but it is necessary to focus on the alternative advantage than only offering all programs for all students. This alternative advantage is positioning, which according to Kotler and Fox (2002) is "an attempt to distinguish the school from its competitors along real dimensions that students value in order to be the preferred school for certain student segments" (p.11). According to experience of worldwide known authors like Hatton, most of educational institutions reach the stage three – stage of innovation. There is an easy test for setting if the institution reaches the stage four. The institution has to be able to clearly define its position at the positioning map.

5) **Marketing as strategic planning.** At the present turbulent environment educational institutions make not only a great effort and spent plenty of money on the competitive fight, but also for adapting themselves to turbulences and changes (economic, demographic, political, etc.), which result from chaotic environment, in which educational institutions operate. These external changes and new trends is necessary to take into account, when the institution prepares study programs, carries out revision of offered study programs, creation of image and positioning. In this stage institutions accept marketing as a tool of strategic planning. Institutions set the marketing goals, goals of communication mix, budgets, tools of feedback, etc.

6) **Marketing as enrolment management.** At the last stage universities realize that when the student is enrolled, it is necessary to treat each student as valued partner. This relationship exists not only during university education but also after graduation. The satisfied student is a valuable tool of positive "word of mouth". Therefore it is necessary to consider students as equally equal partners, which are becoming a part of strategic marketing management of the university, and participating in creating contents of courses and extracurricular activities.

Picture 1: Positioning
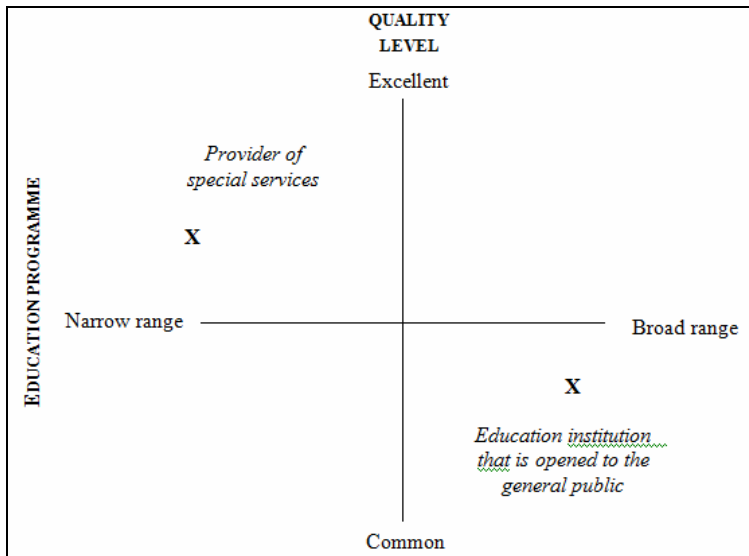
Source: Hatton, A., Sedgmore, L. (1992) (p. 21)

If the marketing is accepted at the strategic level of the institutions, it becomes very valuable tool of the strategic decision and planning. By far not all institutions achieve this stage of acceptation of marketing and lots of them have been staying at previous stages.

Marketing at all branches has passed through fundamental development of competing concepts under which organizations conduct their marketing activities: production concept, product concept, selling concept, marketing concept, social marketing concept up to integrated marketing and the modern phenomenon social responsibility marketing.

Hatton and Sedgmore (1992) state that the education has passed through typical development of competing concepts with small modifications, which result from the principle of the provided educational services. We cannot consider the market of educational institutions, as mention above, as a common market. Despite there is a problem with functionality of the key parameter of the market mechanism – price, educational institutions are forced to change their attitude toward marketing focused on the customers' value by the strengthening competition and at present by the impact of occasional and extensive turbulences in the surrounding environment.

The product orientation (marketing product concept) was typical for most of educational institutions not long ago. This concept is typical for the environment with the limited demand and slight competition, which was typical for foreign educational institutions after the World War II, when

educational institutions could choose from students. Their success was based on the long-time tradition and offered curricula. In the Czech Republic the product concept was typical for the whole communist regime till 1989. Educational institutions were under the aegis of the public sector and had no motivation and even no free will to modify their offer and adapt their offer to the needs of their "clients" – students. By using product concept, educational institutions focus on curricula and they do not focus on the adequate satisfying of stakeholders' needs.

The selling concept is usually mistaken for the focus on the customer. Most of institutions move to the selling concept at the moment, when the first competitive pressures start to occur in the surrounding environment. At this moment educational institutions starts to realize that not all customers' consider their curricula as the most satisfying offer. The selling concept is mainly typical for the first and second stage of the evolution of marketing by educational institutions. Advertising activities and usage of marketing tools for presentation of curricula is representative for the selling concept. This concept is not radically different from the product concept. Educational institutions focus on curricula and offered study courses not on customers. The aim of institutions is to sell the product, not to modify study programmes according students' needs.

Lots of educational institutions stay in the product or selling phase and they cannot effectively use strategic marketing. They carry out marketing activities ad hoc and only for achieving of objectives. Lots of institutions get to this stage with the persuasion, that this means the acceptance of marketing. The basic premise for the real marketing approach is the focus on customers and movement towards modern marketing concept of holistic marketing. The objective of the focus on customers is accurate identification of needs and desires of key segments at target market by means of marketing research. Then it is necessary to use all marketing knowledge to offer curricula, which will be on the high academic level and at the same time they will correspond with desires of individual target segments and with development of other activities focused on key stakeholders.

At the competitive market, which is full of turbulences, this effort leads educational institution to satisfying of needs and desires of segments, which are crucial for a concrete institution, creating of positive image of institution in stakeholders' minds, securing of strong competitive position and at the same time to the achievement of the competitive and comparative advantages against the other key market players.

Educational institutions usually start to use the **customers' orientation** at the moment when significant changes, which caused failure of other institutions, occur. At this moment educational institutions are forced to switch over to the customers' orientation of the marketing. Otherwise they are not able to gain sufficient number of students, new types of customers, or ensure

adequate funding. We are passing through this situation right now in time of economic crisis.

4. Marketing of the educational institution and the current environment of turbulences and chaos

In recent years the circumstances not only in the Czech market but also in the foreign market have dramatically changed. Educational institutions have to face problems resulting from factors associated not only with demographic development, but also with keen competition and turbulences. During economic crisis these turbulences have appeared not only in the private sector, but in the public sector, too.

Educational institutions have to start using tools which have been typical for classic business environment to gain necessary number of high-quality students. Marketing has becoming a very important tool of the educational institutions' strategic planning. After economic crisis we have to take into account the fact that the conventional strategic planning (for the period from three to five years) has become dangerous. The traditional strategic planning, which is based on analytic tools, can lead to underestimating of chaos and incorrect reactions, or omission of opportunities that are also a part of chaotic environment. Educational institutions should include new approach of chaotic, which according to Kotler (Kotler, 2009) presents "Disciplined approach of seeking for sources of turbulence, prediction of threats and opportunities and serving as a tool for preparation of adequate reactions ensuring successful survival of the firm and its further prosperity with the aim of achieving a sustainable business". Except the chaotic it will be necessary to master tools like the strategy scenario planning, which enable to react more flexibly to unexpected change in environment.

In the turbulence environment all economic entities have to face new challenges and threats. Therefore educational institutions have to start to use strategic approach and implement policies that were formerly the dominant of the commercial sphere. The educational institutions have started to exercise step by step the terms of Service Quality, Total Quality Management, satisfaction of customers' needs, etc. Many American educational institutions, inspired by the Malcolm Baldrige National Quality Award competition, which was launched in 1987, have started to apply the Baldrige award criteria (their mutation for educational sphere). These criteria include the whole range of basic categories and key values, for example (Kotler 2002, p. 35):
- Leadership – involved the quality-improvement, but it is primarily focused on educational institutions' mission and values, concerning social responsibility marketing and legal and ethic standards

- Strategic planning and focus on customers and key group of stakeholders
- Customer-driven quality
- Knowledge management, management of information and consecutive improvement of organisation, information technology and labour force
- Process management
- Fast respond and prevention
- Management by fact and results (results of students, other customers, stakeholders, labour force, financial results, etc.) and
- Partnership development

Except problematic crisis environment educational institutions have to face severe growth of customers' force. Formerly there was typical one way information flow – from educational institution towards client. In the present period of information technologies customers are overflooding of information. This is one of the most significant reasons, why customers have started to leave their traditional role of passive information receiver in the process of marketing communication. Customers actively participate in this process especially through the Internet, chat rooms and forums and phenomenon of social networks.

Nowadays the significance of the internet is for marketing communication and strategy of commercial and public subjects crucial. Internet is one of the primary communication medium that cannot be omitted from the communication strategy. The main reason is the constantly increasing number of users of the Internet, because it is a significant part of our lives, work and entertainment. Some people cannot imagine their day-to-day regime without the Internet. The Internet has become the critical component of universities' communication strategies, because the Internet is a modern trend mainly for the young generation. This fact is confirmed by the statistics of the Czech statistical office (*Český statistický úřad)*, which approved that the Internet is used mostly by the age group between 16 and 24 years, where the Internet is used by 95.4% of the respondents. According to the research of the Czech statistical office "Use of ICT by Households and Individuals in 2009" (*"Využívání informačních a komunikačních technologií v domácnostech a mezi jednotlivci v roce 2009"*) , which includes a sample of population with age structure 16+, 56% of respondents used the Internet in last 3 months (that is 11% more than in 2007). In the age group 16 – 24 years, which involves key target segment of universities, the percentage is much higher than in 2007. There was the increase of 8% in 2009. That means that during last 3 months the Internet was used by 90% of respondents in this age group. There is a continuous increase of users of the Internet, for detail refer to the next graph.

Graph 1 – Users of the Internet

2004	2005	2006	2007	2008	2009
28%	32,1%	41%	45%	54%	55,9%
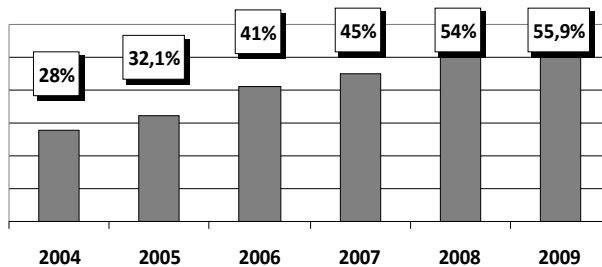
Source: Czech statistical office

As it was said thereinbefore the customers retrieve information on their own. Social networks (Facebook, or MySpace), which operate as interconnected networks, are one of the main modern trends in internet communication. Their main aim is to interconnect various users and enable them to share information and data with other users in the given group and to communicate within the scope of this network. Social networks have been developing very quickly and in the future they will be the most important tool for the schools' marketing communication. The Internet is the primarily source for information retrieval especially for students and rising generation. The author's research, which was carried out on the sample of universities with managerial-economic scope in the Czech and Slovak Republic proved that the Internet is the key communication channel for universities. From the total number of 297 inquired respondents from the seven various universities, more than 50% of respondents stated that their visit websites of their university at least once a day. 82% of respondents visit websites three times a week and only 1% of respondents do not visit them at all. The importance of the Internet and communication via e-mail and web for addressing of the target segments will be still increasing.

For educational institutions the electronic communication is very effective marketing tool. And what then are the main reasons for usage of the Internet in the educational institutions' communication strategy?
1. The Internet is used by 90.3% of respondents in the age group between 16 and 24 years (the key segment for universities)
2. The Internet is the communication channel that is available 24 hours per day, 7 days a week
3. The Internet is one of the most effective marketing tools for reaching the target market
4. The Internet offers the possibility of saving electronic versions of prospects, leaflets, and school's newspapers and newsletters
5. Websites are the ideal tool of effective two-way communication, they enable easy feedback for stakeholders by e-mail, chat rooms, or quick reply forms

6. Websites' statistics simplify acquiring information about key users
7. Websites are very effective tool of the marketing research.

5. Results of the author's marketing research of the websites of universities

One of the most important communication channels of the universities' target segment is the Internet; therefore the author's marketing research was focused on the communication of the universities by means of websites. Results of the author's marketing research confirmed the importance of the Internet for universities as an effective marketing communication tool. The marketing research was carried out at the universities with the similar study programs as the Faculty of management of University of Economics in Prague.

5.1 Definition of the problem, research's purpose and goals

We can say that this research is a descriptive research, which is mainly focused on evaluative questions.
The main goals of the research follow:
- The websites' visit rate
- Basic characteristics – fulfilment of the purpose of websites, pop-ups, functionality of links
- Design – graphics processing, modern style, etc.
- Operation of website, lucidity
- Website content – up-dating
- Additional functions – for example access to the catalogue of library, e-mails, access to the students' hall (order of meal on-line)
- Further internal and external channels of communication with key stakeholders.

Key characteristics of the chosen respondents:
- Study at the university – Bachelor, Master or PhD Study Programmes
- Age group – 18 to 25 years – full-day form of study (according to the statistics of the Czech statistical office this age group mostly uses the Internet for their work); age group 18+ for the combined form of study
- Knowledge of the research problem
- Interest in the research problem
- Frequent usage of the Internet.

5.2 Selective sample of respondents

The selective sample of respondents was determined by the quasi-representative technique. The author combined the quota selection and the selection by judgement. The author used her judgement for the selection of current students of chosen universities, because they represent the most numerous group of web sites' users of these institutions.

One of the most difficult problems was the determination of the number of respondents with reference to the preservation of the low expensiveness and the representativeness of the chosen sample. Finally we determinate the minimum number of 20 respondents from the group of the students of the bachelor study programme and minimum number of 20 respondents from the group of the students of the master programme.

In the pilot part of the research we used interrogatories. The pilot part of the research was carried out in autumn 2007 at the four universities – the University of Economics in Prague (Faculty of Management in *Jindřichův Hradec*), University of South Bohemia (USB) in České Budějovice, Institute of Hospitality Management in Prague (field of study Economics and Management) from the Czech Republic and Comenius University in Bratislava (Faculty of Management) from the Slovak Republic.

The second part of the research that picked up on the results of the pilot research involves further 3 faculties from the Czech Republic - Newton college, University of Finance and Administration in Prague and Banking Institutte College of Banking in Prague.. This time we did not used interrogatories, but we used interactive web form. We supposed higher return that was also approved.

5.3 Evaluation of the marketing research

In the following part the author presents concrete results of her research. The following table contents the key information of respondents.

Table 1: **Summary of data**

| Summary of data	
Bachelor programme	173
Master programme	114
PhD. programme	3
Women	191
Men	106

Source: Author's research

Note: the total sum of students of bachelor, master and PhD study programme does not match to the total sum of the respondents by reason of unfulfilment of the study programme in 7 cases.

5.4 Visit rate of web sites

From the following graph we can see that the websites of the chosen universities are very important source of information.

From the total number of 297 inquired respondents from 7 different faculties of the Czech and Slovak universities more than 50% (accurately 56%) of the respondents stated that they use the website of their university minimally once a day and 82% of respondents use websites minimally three times a week.
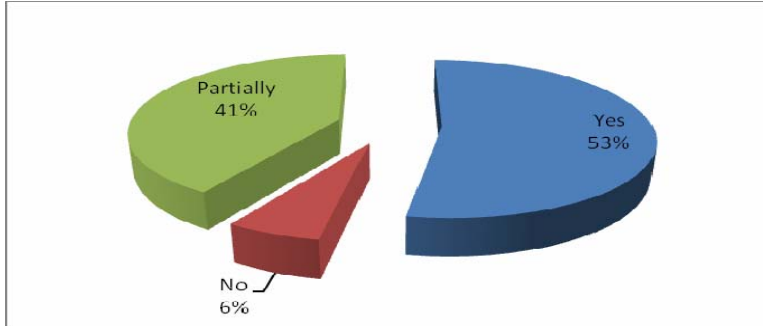
Graph 1: Visit rate of websites
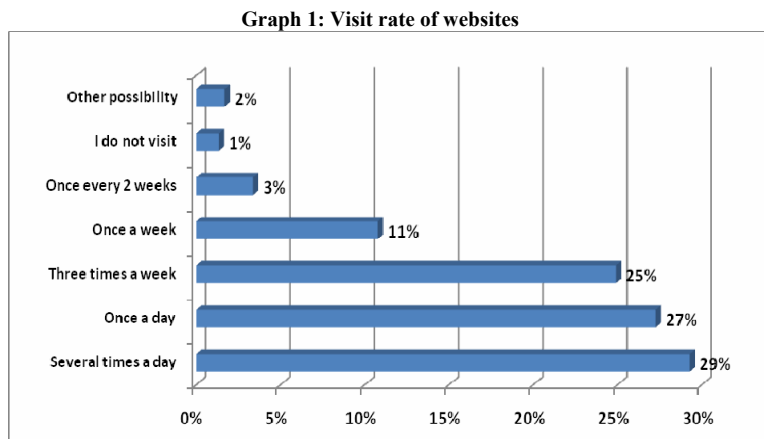
Source: Author's research

5.5 Satisfaction of students' needs as websites' users

Most of students state that their university's websites satisfy fully or partially their needs.

**Graph 2: Satisfaction of students' needs as websites' users**

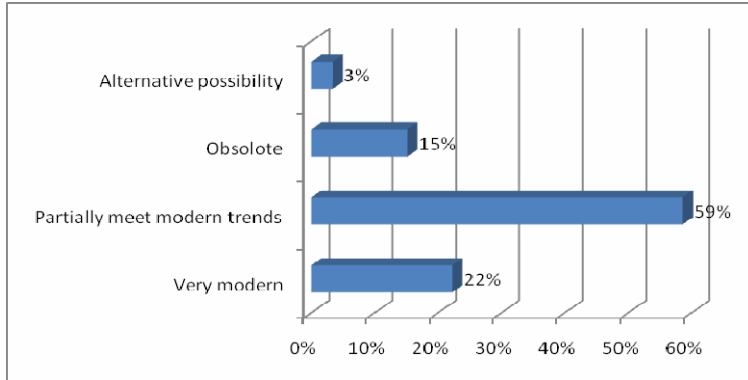Source: Author's research

5.6   *Graphic design of websites*

Respondents evaluate uniformity and modernity of graphic design, too. 59% of respondents state that graphic design of their institution websites partially meets modern trends. Websites of the Newton College gain the best evolution in term of the modernity. 61% of students consider this websites as very modern.

Graph 3: Uniformity of websites' graphic design
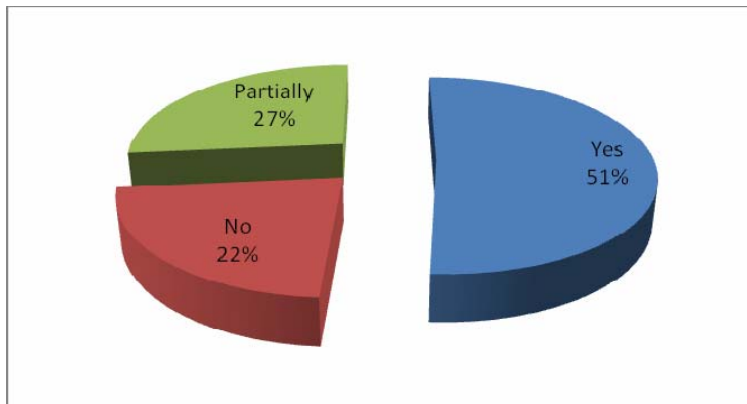
Source: Author's research

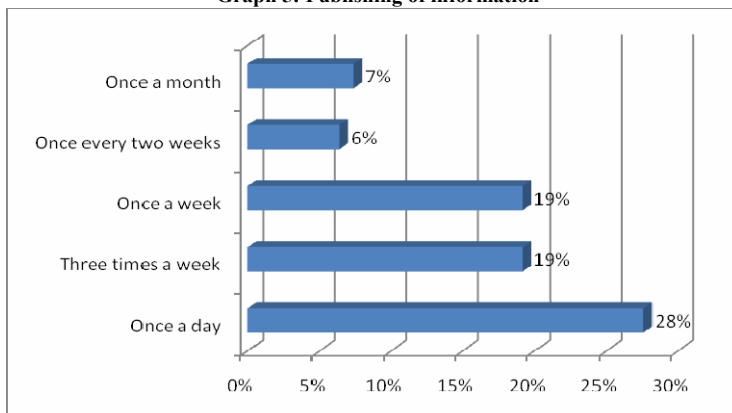**Graph 4: Modernity of websites' graphic design**
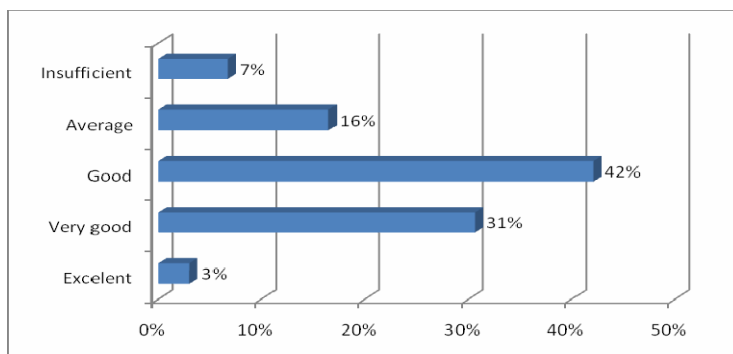
5.7 Publishing of information

Actual information is very important element not only for students but also for all stakeholders; therefore the author involved this problem in the research, too.

Graph 5: Publishing of information

Graph 7: Range of published information

Source: Author's research

5.8 *Language variations of websites*

Although author realized her research in the Czech and Slovak Republic, it is necessary to take into account the language variations of websites. It is necessity to have the translation of websites minimally in one world language, because of growing interest of foreigner students in the Czech and Slovak universities. All universities has English version of their websites, some also German or Russian version.

5.9 *Results of research*

The overall result of the research can be considered as average. The approach of institutions to new trends is rather neutral. None of the institutions offer video-conference, videorecording of lectures and courses, or blogs that students, according the research, miss at their websites mostly.

6. Conclusion

The current economic crisis has brought along unexpected turbulences in the environment that often lead to the chaos. Educational institutions have to respond to the sudden situations very quickly, otherwise implication could be fatal. Kotler (2009) in discussing the problem of current economic crisis states that most of firms, even educational institutions have committed several mistakes. One of them is also the reduction of marketing cost, cost for support of brand and development of new curricula, education program and new services. Reduction of cost associated not only with marketing, but

also with sale and distribution, employee development then lead in the customers' disaffection. The educational institutions should not underestimate this fact, because there is a huge competitive fight that is caused not only by the increasing capacity of educational institutions but also by the decreasing number of the graduates of secondary schools.

Every educational institution will be led by the turbulence and chaos to the different situation depending on geographical location, reputation and offered field of study. For some educational institutions these turbulences will mean greater risk, for others smaller. The chaos can also bring new opportunities to some institutions for which it is necessary to be prepared enough to embrace opportunity and use it.

In the general view it is necessary to consider the educational institution in the same way as whatever other commercial subject, firm or organisation - as the service provider. The fundamental characteristic of the offered service is the combination of its identity – brand, organisation, product, or service, which institutions offer.

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Agglomeratıon Patterns In Turkısh Manufacturıng Industrıes

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The main purpose of this paper is to identify the main reasons behind the agglomeration in Turkish manufacturing industries for 1980-2001 period. Agglomeration can be defined as geographic concentration of the economic activity conditioned on industrial concentration (Wolfmayr-Schnitzer, 2000). Therefore to investigate agglomeration an index that would allow us to see the effects of both regional concentration and industrial concentration should be used. To measure agglomeration in Turkish manufacturing industries, the following index; suggested by Ellison and Glaeser (1997) is used:

$$\gamma = \frac{G - \left(1 - \sum_j s_i^2\right) H}{\left(1 - \sum_j s_i^2\right)(1 - H)}$$

$$\gamma = \frac{\sum_{j=1}\left(s_{ij}^s - si\right)^2 - \left(1 - \sum_j s_i^2\right) H}{\left(1 - \sum_j s_i^2\right)(1 - H)}$$

where, H=Herfindahl index, E= employment, s= shares, i= industry, j= region

sij= share of employment in industry i in region j in total employment of region j

si= share of total employment in industry i in total employment

$$s_{ij}^{\,s} = \frac{E_{ij}}{E_j} = \frac{E_{ij}}{\sum_i E_{ij}} \qquad s_i = \frac{E_i}{E} = \frac{\sum_j E_{ij}}{\sum_i \sum_j E_{ij}}$$

According to Ellison and Glaeser (1997); $\gamma = 0$ indicates a random location   choice, $\gamma > 0.05$ indicates high level of agglomeration, $0.02 < \gamma < 0.05$ indicates medium level of agglomeration, $\gamma < 0.02$ indicates low level of agglomeration and $\gamma < 0$ indicates dispersion of economic activity. To investigate the agglomeration patterns in Turkish

manufacturing industry, we use the Ellison and Glaeser index of agglomeration as a dependent variable and regressed it on explanatory variables which represent different theories of trade, following Amiti(1999). Therefore, we can see that which trade theory best explains agglomeration and the underlying reasons behind agglomeration. The two following models are estimated with fixed effects;

$$\gamma it = \beta 0 + \beta 1 TECDIFit + \beta 2 HOit + \beta 3 SCALEit + \beta 4 INTERMit + \varepsilon it$$
(1)

$$\gamma it = \beta 0 + \beta 1 TECDIFit + \beta 2 HOit + \beta 3 SCALEit + \beta 4 INTERMit +$$

$$\beta 5(TECDIF * HO)it + \beta 6(TECDIF * SCALE)it + \beta 7\ TECDIF * INTERM$$

$$it + \beta 8(HO * SCALE)it + \varepsilon it \qquad (2)$$

Where;

$$TECDIF_{it} = \sqrt{\frac{1}{n}\sum_j\left[\frac{\frac{VA_{ijt}}{E_{ijt}}}{\frac{1}{n}\sum_j\frac{VA_{ijt}}{E_{ijt}}} - \frac{\sum_i\frac{VA_{ijt}}{E_{ijt}}}{\frac{1}{n}\sum_j\sum_i\frac{VA_{ijt}}{E_{ijt}}}\right]^2} \qquad HO_{it} = \left|\frac{\sum_j LC_{ijt}}{\sum_j VA_{ijt}} - \frac{\sum_j\sum_i LC_{ijt}}{\sum_j\sum_i VA_{ijt}}\right|$$

$$SCALE_{it} = \frac{\sum_j E_{ijt}}{\sum_j NF_{ijt}} \qquad\qquad INTERM_{it} = \frac{\sum_j(P_{ijt}Q_{ijt} - VA_{ijt})}{\sum_j P_{ijt}Q_{ijt}}$$

The explanatory variables represent; relative technological difference between regions (TECDIF), differences in factor intensities (HO), scale economies (SCALE) and finally vertical linkages proxied by the intermediate goods intensity (INTERM). These explanatory variables attempt to capture different trade theories which can be used to explain agglomeration such as; Ricardian theory of trade, Heckscher-Ohlin theory of trade, new trade theory and finally the new economic geography models. Second model to be estimated is basically an extended version of the first model, which includes interaction terms. To assume that interactions of these explanatory variables are not unrealistic, in fact it is not surprising to observe the effects of interactions of the variables such as technological difference and scale economies or technological difference with different type of factor abundances together in an economy. The results mainly indicate

that the main determinant of the agglomeration process in Turkish manufacturing industries is the technological difference and the vertical linkages. However, considering the fixed effects model might not be the best model to investigate such a relationship, we will also estimate both models using a pooled OLS with differences.

Despite the fact that agglomeration is a widely discussed topic in economic literature for developed countries, there is no empirical investigation of the issue for Turkey. Therefore, we think that this paper will fill in this gap in the literature and provide detailed information on the agglomeration process in Turkish manufacturing industries.

Keywords: Agglomeration, regional concentration, industry clusters, firm location choice

1. Introduction

Agglomeration has become a widely discussed topic in economic literature in the last decade. At the heart of concerns about agglomeration stays the various reasons behind agglomeration and also the effects of agglomeration on industries and economies are being discussed. Krugman (1991) asks; "why and when manufacturing industries concentrate" and researchers are trying to find out the impacts of this concentration.

Traditional trade theories examine the specialization process but without the dimension of space. The advancement in this theoretical context by the inclusion of space dimension is relatively new and began with the new trade theories and new economic geography theories, often called spatial economics. After these "new" theories, geography became vital for economists. In this sense agglomeration; geographical and industrial concentration becomes very important.

Examining agglomeration and the factors behind this process may reveal why some sectors are agglomerated and why some are dispersed. Furthermore the agglomeration process can also help researchers to understand why regional disparities occur. The effects and implications of the process are also important. Some of the questions that arise regarding the implications of agglomeration are: (1) Does agglomeration affect firm entry and exit? (2) Do firms tend to concentrate in centres rather than peripheries? (3) Does agglomeration increase efficiency and productivity of the firms? And (4) Looking from workers point of view; does agglomeration effects wages and unemployment for a specific region and hence creates regional disparities?

In order to examine the effects and implications of agglomeration, first of all agglomeration and its determinants should be fully examined and understood. Therefore in this paper the process of agglomeration is examined and the underlying reasons behind this process are investigated. To uncover these underlying reasons; different trade theories conditioning on different assumptions to explain specialization is used.

There are three main theories that explain regional specialization of industries; traditional trade theory, new trade theory and new economic geography models. The main purpose of this paper is to investigate which theory best explains the agglomeration patterns in Turkish manufacturing industry between 1980 and 2001.

Despite the fact that agglomeration is a widely discussed topic in economic literature for the developed countries, for developing countries and especially for Turkey, agglomeration is a relatively new issue which is quite important and must be investigated.

There are alternative ways to measure specialization; such as Herfindahl index, dissimilarity index, Krugman specialization index, location quotient and Ellison and Glaeser index (E-G index). It is possible to measure industrial concentration and geographical concentration of economic activities using different techniques, however since agglomeration focuses on geographical concentration of economic activity taking the industrial concentration into account, there is only one way of measuring agglomeration; considering both industrial and geographical concentration hence using the E-G index.

Rest of the paper is organised as follows: Section 2 examines previous studies on the topic, Section 3 describes data and methodology used in this study, section 4 reveals the estimation results and finally section 5 concludes the study.

2. Empirical Evidence

There are vast numbers of studies, investigating geographical concentration of firms. The studies concerning the EU usually investigate a country's specialization patterns across the EU. Studies on the US, usually investigate the agglomeration patterns within the country.

Sapir (1996) uses the Herfindahl index to measure country specialization with export data on 100 manufacturing industries. The results of this study indicate that specialization remained constant over 1977-1992 period in Germany, Italy and the UK and increased in France since 1986. As mentioned before, Herfindahl index only measures industrial concentration and gives no information on the agglomeration patterns. Furthermore, according to Brulhart (2001), trade data can only give approximate measures

about specialization. To identify the specialization patterns directly, employment or output data should be used.

Aiginger and Pfaffermayr (2004) use several measures to see the changing concentration trends in the EU. They use data for 14 EU countries from 1985-1998. As a result they find that geographical concentration has declined during the post single market period in the EU, rather than increased. However they use concentration indices, therefore this study shows the results of the changes in industrial concentration rather than agglomeration.

Amiti(1999) analyses the specialization patterns across the EU, using two different data sets (EUROSTAT and UNIDO, including 5 and 10 European countries for the 1976-1989 and 1968-1990 periods respectively). Amiti constructs the Gini indices for both of these data sets in order to see the specialization patterns. After constructing Gini indices, Amiti also regress them on three variables, to see the underlying reason of the specialization in the EU. These three variables are; factor intensities, scale economies and intermediate good intensity to represent, Heckscher-Ohlin theory of trade, new trade theory and new economic geography models respectively.

The results indicate that changes in scale economies and intermediate good intensities have a positive and significant effect on geographical concentration. Therefore we can say that new trade theories and new economic geography models explain the main reasons behind geographical concentration in manufacturing economies in the EU.

Brulhart(1998) also find evidence of an increase in geographical concentration in the EU countries during the 1980's, using Gini index. They use employment data in their studies for 18 manufacturing industries in 11 EU countries. They also find evidence indicating new trade theories and new economic geography models explain international trade best, consistent with Amiti (1999).

Krugman (1991) calculates Gini coefficients for 3-digit manufacturing industries in US and finds that the most geographically concentrated industries are traditional industries such as textile.

Brulhart (2001), uses locational Gini coefficients to measure specialization. Brulhart uses employment and trade data for 32 manufacturing industries over the 1972-1996 period in 13 EU countries. The evidence, however suggests dispersion when trade data is used for measurement, while concentration when employment data is used.

Brulhart (2001) also regress Gini indices on a time trend for the whole sample period. Again there is an increasing time trend for concentration when employment data is used, while the results from the trade data are not statistically significant. The author also uses a measure of centrality to

identify the core-periphery patterns across countries. The results indicate that 17 out of the 32 industries in the sample are concentrated in peripheral rather than central countries.

Ellison and Glaeser (1997) constuct the EG index to measure agglomeration patterns in 459 4-digit manufacturing industries for the US and the results suggest that 446 of these industries shows high levels of agglomeration.

Rosentahl and Strange (2001), adopts the EG index to measure the extent of agglomeration for US manufacturing industries in 2000. Then they regress the EG index in industry characteristics such as proxies of knowledge spillovers, labour market pooling, input sharing, shipping costs and natural advantages. The results indicate that proxies for labour market pooling have the most robust effects, positively influencing agglomeration at geographical levels.

Braunerhjelm and Borgman (2004), use EG index to identify the agglomeration patterns in Sweden. Their results indicate that the most geographically concentrated industries are basic metal industries, mining, petroleum and textile industries.

Bertinelli and Decrop (2005) also use the EG index to identify the agglomeration patterns in Belgium manufacturing industry. The results indicate that for the 1997-2000 period, more than 30% of manufacturing industries in Belgium are highly agglomerated.

Despite the vast number of studies investigating geographic concentration and agglomeration patterns for the US and the EU, the studies in this area for developing countries and especially for Turkey are limited.

Akgungor (2003), identifies the high point clusters for Turkish manufacturing industry for 2000, using the LQ index. The author investigates the high point clusters for each region and investigates the driver industries in those regions.

3.   Data And Methodology

The data that will be used for this analysis is an industry level data which includes 86 industries for the 1980-2001 period. The data is obtained from Turkish Statistical Institute (TurkStat) at 2 to 4-digit sector levels for cities. Then this data is aggregated to the regional level. It would be ideal to analyze a full period of 1980-2009 however there is no available data after 2001.

When trying to examine which trade theory explains the agglomeration process in Turkish manufacturing economies, we can use two different variables to represent the neo-classical model. The first one is to represent the Ricardian explanation of specialization which is due to the effect of

technological differences. The second one is to represent the Heckscher-Ohlin explanation of trade specialization; differences in factor endowments across countries/regions (Wolfmayr-Schnitzer, 2000).

In traditional trade theory, Ricardo explains trade with technological differences between countries. Ricardo (1817) assumes the differences in labour productivity to be the only reason behind cross-country differences in production costs and hence specialization. The following variable is used to capture Ricardian technological differences, letting differences in technology to be represented by the differences in productivity of labour, following Haaland et al. (1999) however in this case it is used to represent the technological differences between regions rather than countries;

$$TECDIF_{it} = \sqrt{\frac{1}{n}\sum_j \left[\frac{\frac{VA_{ijt}}{E_{ijt}}}{\frac{1}{n}\sum_j \frac{VA_{ijt}}{E_{ijt}}} - \frac{\sum_i \frac{VA_{ijt}}{E_{ijt}}}{\frac{1}{n}\sum_j \sum_i \frac{VA_{ijt}}{E_{ijt}}} \right]^2}$$

Where; i denotes industries, j denotes regions, n denotes number of regions, VA denotes value added, E denotes employment and finally t denotes year.

This variable shows the deviation of labour productivity in a particular industry in one region from the average labour productivity in the same industry across the country. This measure only takes high values for high technological differences in region j relative to the other regions; it is not a measure of absolute technological differences. This measure however does not imply positive or negative technological differences for one region since it is using the squared term of differences between one region and the other it takes on high values with both positive and negative technological differences. Ricardo's comparative advantage theory implies that higher technological difference results in higher geographical specialization (Ricardo, 1817). However; the relationship between geographical concentration and agglomeration is not straightforward. It is not feasible to say that high geographical concentration will result in high levels of agglomeration. When considering agglomeration, one should also take into account industrial concentration as well as geographical concentration. When TECDIF takes high values; i.e. when relative technological difference increases, firm exit might increase, and the firms that exit will tend to be small firms rather than large firms. This increase in firm exit will affect industrial concentration by raising the Herfindahl index. Assuming similar numbers of small firms exiting in each region, hence assuming the geographical concentration stays constant; an increase in technological difference will result in a decrease in the level of agglomeration. On the other hand, if the majority of the firms can keep up with the technological change, the Herfindahl index will not change, the production will be more

geographically concentrated and therefore the agglomeration index will rise. As a result it can be argued that the expected sign of TECDIF is ambiguous.

As mentioned above, neo-classical models predict that countries will specialize in industries that are intensive in their relatively abundant factors (Amiti, 1999). This implies that, labour abundant countries will specialize in labour intensive production while capital abundant countries will specialize in capital intensive production. In either case there will be geographical concentration of the production activity. To use factor intensity data in order to capture Heckscher-Ohlin type concentration would be ideal. However; because of the data limitations, in order to capture the factor intensities suggested by the Heckscher Ohlin theory of trade below variable is used as a proxy following Amiti (1999);

$$(H - O)_{it} = \left| \frac{\sum_j LC_{ijt}}{\sum_j VA_{ijt}} - \frac{\sum_j \sum_i LC_{ijt}}{\sum_j \sum_i VA_{ijt}} \right|$$

This variable, measures the deviation of labour or capital intensities in an industry in a specific region from the average. Such measure takes high values for both labour intensive industries and capital intensive industries. However since Heckscher Ohlin theory of trade does not imply that the capital abundant industries will be more geographically concentrated than the labour abundant industries or vice versa, the measure is used in absolute value (Amiti, 1999). Therefore this measure implies that; the more intensive a country/region in use of one specific factor in production will be more geographically concentrated. Again this is a measure of relative factor abundances rather than absolute. This variable will affect geographical concentration but not industrial concentration. Therefore it is possible to say that the expected sign of the relationship between HO and the agglomeration index is positive.

The neo-classical theory of trade only assumes and explains inter-industry trade across countries/regions. It is however observed that regions that are similar in technology also experience high levels of trade. Therefore, comparative advantage is seen as insufficient as an explanation of trade and specialization (Wolfmayr-Schnitzer, 2000). New trade theories and new economic geography models are designed to encounter both inter-industry and intra-industry trade.
According to Helpman(1999), scale economies are the main reason behind product differentiation and this drives countries to specialize in different products and therefore increases the incentives for trade. Therefore models that allow scale economies and product differentiation can explain the high volume of trade between similar countries. To capture this aspect of new trade theory the SCALE variable is used, following Amiti (1999);

$$SCALE_{it} = \frac{\sum_j E_{ijt}}{\sum_j NF_{ijt}}$$

Where; NF denotes number of firms. This measure can be used as a proxy to capture plant-specific scale economies. From theory, scale economies are expected to increase geographical concentration and hence increase the level of agglomeration. Therefore it can be said that there is a positive relationship between scale economies and agglomeration.

According to new economic geography models; agglomeration of manufacturing industries is basically demand driven and related with vertical linkages between upstream and downstream firms (Amiti 1999, Brulhart 2001). Krugman and Venables (1995) and Venables (1996) argue that a large number of downstream firms will attract upstream firms due to demand linkages and similarly, a large number of upstream firms will attract downstream firms due to cost linkages. Basically, the implication of the economic geography models is that industries using a high proportion of intermediate goods will tend to concentrate geographically.

In order to capture the intermediate goods intensity, implied by the new economic geography models, the following measure is used;

$$INTERM_{it} = \frac{\sum_j (P_{ijt} Q_{ijt} - VA_{ijt})}{\sum_j P_{ijt} Q_{ijt}}$$

Where; PQ denotes the value of output. Since, the input-output tables for the covered period for Turkey's regions are not available; this measure is used as a proxy for intermediate goods intensity, following Amiti(1999).

According to the new economic geography models, if firms use high proportion of intermediate goods in their production processes, i.e. as vertical integration rises; this will result in high levels of agglomeration.

Table 1 Descriptive statistics:

	Mean	Median	Standard Deviation
Gamma	0.3061	0.3880	0.3755
TECDIF	1.2545	0.9046	10.4762
H-O	0.3035	0.0890	2.1460
SCALE	127.7249	55.2252	272.6179
EG	0.6167	0.6303	0.1405

4. Estimation Results

The E-G index for agglomeration is used as a dependent variable to estimate the following model:

$$\gamma_{it} = \beta_0 + \beta_1 TECDIF_{it} + \beta_2 H - O_{it} + \beta_3 SCALE_{it} + \beta_4 INTERM_{it} + s_{it}$$
(1)

This type of estimation is widely used in the literature[66] to examine which type of trade theory best explains the main forces behind agglomeration.

As it can be seen from table 1, the means and standard deviations of the explanatory variables that are used, differ a lot from each other; therefore when interpreting the results comparing the magnitudes of the impact of each variable would be misleading, hence standardized coefficients are used for the sake of interpretation.

The estimation results of equation (1) are shown in table 2:

Table 2: Estimation results of Equation1

Dependent variable: Gamma

	Eq.1	Eq.1	Eq.1(robust)	Eq.1(robust)
Constant	.0728* (0.038)	.0723*** (0.023)	.0728* (0.040)	.0723** (0.025)
TECDIF	.0161 (0.0198)	.0088 (0.0196)	.0161** (0.005)	.0088 (.007)
(H-O)	-.0491** (0.021)	-.0548** (0.020)	-.0491** (0.020)	-.0548** (0.025)
SCALE	.0724** (0.032)	.0545** (0.022)	.0724** (0.032)	.0545*** (0.014)
INTERM	.0214 (0.028)	.0201 (0.023)	.0214 (0.031)	.0201 (0.023)
Year dummies	No	Yes	No	Yes
Prob.> (chi2/F.stat)	0.0301	0.0000	0.0004	0.0000

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[66] Amiti (1999), Brulhart (1998), Brulhart (2001).

Fixed effects	No	No	No	No
Hausman test stat.	0.0782			
Number of obs.	1677			

*** 0.01<p, ** 0.05<p, * 0.1<p

Hausman test statistic suggests random effects rather than fixed effects for estimating such equation. The first column shows the random effects estimation results without year dummies, second column shows the random effects estimation result with year dummies, and third column shows the robust random effects estimation results without year dummies and last column shows the robust random effect estimation results with year dummies for Equation (1).

The TECDIF variable has a positive effect on agglomeration in all cases, indicating a technological advancement will result in rising levels of agglomeration. This result can be interpreted as; an increase in TECDIF variable increases the geographic concentration without affecting the industrial concentration or as the increase in the raw concentration index is higher than the decrease in the Herfindahl index. Technological difference is found to be significant only in the robust case without year dummies. Including year dummies when estimating the equation is expected to increase the impact of the variables and it also acts as a control for the time effects. Surprisingly; TECDIF variable becomes statistically insignificant in the robust case with year dummies which might indicate a specification problem.

Contrary to the expectations there is an inverse relationship between factor abundances; which is used to proxy Heckscher-Ohlin type of specialization, and agglomeration. The coefficients of H-O variable are significant in all cases.

SCALE variable has a positive and significant effect on agglomeration in all cases. Finally the INTERM variable, representing the vertical linkages is insignificant in all cases, suggesting that the agglomeration process in Turkish manufacturing industries is not due to vertical linkages.

Since the standardized values for each variable are used, the magnitudes of the impacts are now comparable. When results with robust standard errors are investigated, it can be seen that the biggest impact on agglomeration is caused by the SCALE variable. This result suggests that in Turkish manufacturing industries the agglomeration process can be best explained by the new trade theories.

Using this equation to examine the explanation power of trade theories on agglomeration, however intuitive, might not be sufficient. Therefore, a second equation including the interaction effects between some independent

variables is also estimated. The interaction variables are; TECDIF*HO, TECDIF*SCALE, TECDIF*INTERM and HO*SCALE.

TECDIF*HO; basically represents the neo-classical theory of trade which explains specialization via technological differences and factor intensities. TECDIF*SCALE variable basically attempts to capture the impact of economies of scale and technological difference on agglomeration. In a similar sense, TECDIF*INTERM variable tries to capture the impact of technological difference and vertical linkages on agglomeration. Finally the variable HO*SCALE is used to examine the relationship between agglomeration and the joint case of factor endowments and scale economies. This is again an attempt to see the effects of classical trade theories with recent developments. The expected sign of this variable is positive; because if firms are already agglomerated due to the differences in their factor endowments taking advantage of scale economies will make firms to concentrate even more and hence increase the level of agglomeration due to both factor intensities and scale economies.

The equation with interactions is as follows:

$$\gamma_{it} = \beta_0 + \beta_1 TECDIF_{it} + \beta_2 (H-O)_{it} + \beta_3 SCALE_{it} + \beta_4 INTERM_{it} + \beta_5 (TECDIF * HO)_{it} + \beta_6 (TECDIF * SCALE)_{it} + \beta_7 (TECDIF * INTERM)_{it} + \beta_8 (HO * SCALE)_{it} + a_{it}$$

(2)

Using these interactions in the equation can be helpful to capture any non-linear relationship that might exist within the equation. The estimation results of Equation (2) are as follows:

Table 3: Estimation results of Equation (2)

Dependent variable: gamma

	Eq.2	Eq.2	Eq.2(robust)	Eq.2(robust)
Constant	.1383*** (0.026)	.142*** (0.026)	.1383*** (0.022)	.142*** (0.023)
TECDIF	-5.368*** (1.46)	-6.247*** (1.44)	-5.368* (3.25)	-6.247* (3.53)

H-O	.163** (0.07)	.1751** (0.07)	.1630 (0.13)	.1751 (0.13)
SCALE	.1109* (0.06)	.1219* (0.06)	.1109 (0.13)	.121 (0.144)
INTERM	-.1104** (0.047)	- .1555*** (0.04)	-.1104 (0.07)	-.1555* (0.08)
(TECDIF*HO)	-1.788** (0.69)	-1.787** (0.66)	-1.788 (1.20)	-1.787 (1.18)
(TECDIF*SCALE)	1.551** (0.51)	1.649*** (0.49)	1.551 (0.94)	1.649* (0.93)
(TECDIF*INTERM)	5.836*** (1.64)	6.645*** (1.60)	5.836 (3.61)	6.645* (3.88)
(HO*SCALE)	-.1105** (0.04)	-.1087** (0.04)	-.1105 (0.08)	-.1087 (0.08)
Year dummies	No	Yes	No	Yes
Prob.(F.stat)	0.0005	0.0000	0.0000	0.0000
Fixed effects Hausman test stat.	Yes 0.0424	Yes	Yes	Yes
Number of obs.	1677			

*** 0.01<p, ** 0.05<p, * 0.1<p

The first column in the table represents the fixed effects estimation results for Equation (2) without year dummies. The second column shows the results of the fixed effects estimation results of the equation with year dummies. The third column shows the results of the robust fixed effects estimation without year dummies and finally the fourth column represents the results of robust fixed effects estimation with year dummies.

In the first two columns of the table all the variables are statistically significant. The results with year dummies have a higher overall significance

when compared to the results without year dummies, which implies that the time dimension has an important impact on the agglomeration process. The standard errors of the independent variables stay the same however the impacts of all variables have increased significantly. These results indicate that there are year specific effects. When the estimation results for the case without year dummies are compared, it is seen that the overall fit of the model is better in the robust case; however only TECDIF variable is significant. The effects of all the independent variables are still the same; the only difference is that the standard errors in the robust case are significantly higher. In the case with robust standard errors with year dummies included, the coefficients are exactly the same with the results with non-robust standard errors; the only difference again is high standard errors. When robust estimates with and without year dummies are compared; it can be seen from the table that the standard errors are quite similar; however the coefficients are higher and more significant in the case where year dummies are used. This result again highlights the importance of time dimension in the agglomeration process. According to the estimation results of Equation (2); TECDIF; assuming all the interactions to be zero, has a negative and significant effect on agglomeration in all cases. This suggests that the technological change in Turkish manufacturing industries has a bigger impact on the industrial concentration rather than geographical concentration. Technological difference increases firm exit and therefore has a negative impact on agglomeration. The H-O variable, representing factor intensities; assuming all interaction terms to be zero, has a positive and significant effect on agglomeration in the non-robust cases. This effect gets stronger when the year specific effects are included in the model. However H-O is insignificant when the standard errors are robust. The variable used to represent the effect of scale economies has a positive significant impact again in the non-robust cases assuming no effects from interactions. INTERM variable, representing the vertical linkages on the economy; assuming all the interaction terms to be zero, is only insignificant in the robust case without year dummies. In all other cases, it has a negative and significant impact on agglomeration. This result; however contradicts with the theory. TECDIF*HO variable, representing the joint case of technological difference and factor intensities has a negative impact on agglomeration. This result implies that the effect of technological difference on agglomeration is dominant over the effect of the factor intensities. Another explanation might be that this result is due to the structure of Turkish manufacturing industry. Since the labour abundant industries are predominant in most of the regions, it is not surprising that the effect of technological difference outweighs the effect of factor intensities. TECDIF*SCALE and TECDIF*INTERM variables have both positive and significant effect on agglomeration, suggesting that the technological difference has a positive impact on agglomeration when scale economies or vertical linkages are considered. SCALE variable has no significant effect on agglomeration when no interactions are assumed however the positive significant effect of TECDIF*SCALE variable implies that the effects of scale economies are important when considered jointly with technological

differences. Finally HO*SCALE has a negative however small impact on agglomeration. This result is again contradicts with the expectations. In the robust case with year dummies, the only significant variables are TECDIF, INTERM, TECDIF*SCALE and TECDIF*INTERM.

When the results of the two equations used are compared; it is clear that the interaction terms are quite important for such estimation. When interaction terms are included all of the variables have larger impacts on agglomeration. Including interaction terms also show that the Ricardian trade theory best explains the agglomeration process in Turkish manufacturing industries, without interaction terms however it was seemed to be the new trade theory. As a result it is possible to say that there was an omitted variable bias in the estimation of equation (1), and this bias might be reason of unexpected negative sign of the H-O variable and it might also explain why TECDIF variable was insignificant in the robust case with year dummies.

According to Brambor et al. (2006), models with interaction terms should be interpreted considering the partial marginal effects. Therefore, when interpreting the variables in model (2) the marginal effects should also be considered. Following Dietrich(2010), the marginal effects at the 25th, 50th and the 75th centiles are calculated.

When the estimation results are considered with the marginal effects, it is possible to say that agglomeration in Turkish manufacturing industries can be explained by technological differences as suggested by Ricardo and vertical linkages, proxied by intermediate goods intensity as suggested by new trade theories. The negative sign of the INTERM variable in the estimation results suggests that the technological difference has a much larger impact on agglomeration which can dampen the effect of the vertical linkages in the economy. Furthermore scale economies have significant effects on agglomeration via technological differences. As a result the dominating reason behind the agglomeration in Turkish manufacturing industries is the relative technological difference across regions. So powerful the effect of the TECDIF variable, it also outweighs the positive impact of vertical linkages and cause decreasing degrees of agglomeration. This result also explains the reason of decreasing agglomeration levels throughout the sample period.

When estimating equation (2), fixed effects estimation method has been used, however such estimation method might not be the right specification for the question in hand. The issue with agglomeration is that not only it is a dynamic process, it also involves industry specific characteristics which differ between and within region; therefore fixed effects might lead to biased results due to a specification error. Hence; equation (2) is estimated using pooled OLS with differences to account for the industry specific characteristic that changes between and within regions and also over time. However; using differences decreases the number of observations and hence degrees of freedom, therefore equation (2) is estimated only up to 5

differences. For the sake of comparability again standardized coefficients are used. The estimation results are as follows:

Table 5: Estimation results from pooled OLS

Dependent variable: Gamma (EG index of agglomeration)

	1st differences	2nd differences	3rd differences	4th differences	5th differences
constant	.001	.002	-.011	-.081	-.005
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
TECDIF	-6.2354**	-8.939**	-8.234**	-7.795**	-.9465**
	(0.06)	(0.07)	(0.08)	(0.09)	(0.09)
H-O	.1306*	.1148**	.1096*	.1268**	.1219*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
SCALE	.1949***	.1853***	.1989***	.1935***	.1722***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
INTERM	-.0075	-.0296	-.0256	-.0295	-.0346
	(0.16)	(0.17)	(0.18)	(0.20)	(0.22)
TECDIF* HO	-1.264	-3.207**	-2.493*	-2.610**	-.2287**
	(0.00)	(0.00)	(0.08)	(0.00)	(0.01)
TECDIF* SCALE	1.349*	2.590**	2.149**	2.144**	.0938*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
TECDIF* EG	6.179**	9.582**	8.609**	8.290**	1.073**
	(0.07)	(0.08)	(0.08)	(0.10)	(0.11)
HO*SCA LE	-.0952**	-.0752	-.0836	-.0810	-.0656
	(0.00)	(0.000	(0.00)	(0.00)	(0.00)
Number of obs.	1495	1430	1361	1282	1204
Prob.>F	0.000	0.000	0.000	0.000	0.000

*** 0.01<p, ** 0.05<p, *0.1<p

Results from the pooled OLS estimation with differences indicate that TECDIF has the biggest impact on agglomeration and the relationship between technological differences and agglomeration is negative; suggesting that as technological differences increase this increases firm exit via increasing the number of firms that cannot keep up with the technological advancement, become inefficient and hence exit the industry. Result from this type of estimation differs from the fixed effects estimation on the variable INTERM. Table 5 indicates that INTERM variable is insignificant. Furthermore H-O variable is significant and has a positive impact on agglomeration when interactions are assumed to be zero. Finally, SCALE has the best explanation power on agglomeration. As a result, in Turkish manufacturing industries, new economic geography theory best explains the agglomeration process and Ricardian trade theory and also factor abundances seem to explain agglomeration.

According to estimation results it is possible to say that the agglomeration process in Turkish manufacturing industries is driven by the relative technological differences between regions and the factor abundances, but most importantly it is characterised by spatial dynamics under the assumptions of imperfect market conditions, increasing returns to scale, labour mobility and transport costs; suggested by the new economic geography theory. When the results from 5th differences is further examined it can be seen that the impact of all the variables decrease dramatically.

5. Conclusion

As a result technological differences has a powerful negative effect on agglomeration when the interaction terms are not considered and hence causes in decreases in agglomeration index in most cases. However when technological differences are considered together with vertical linkages and scale economies the effect on agglomeration is positive in both cases suggesting that the existence of scale economies and vertical linkages helps firms to keep up with the technological changes or take advantage from technological spillovers and helps them to stay in the market. The results indicate that in Turkish manufacturing industry the agglomeration process can be explained by Ricardian theory of trade, new trade theories and new economic geography models. This suggests that technological differences are one of the main reasons behind the agglomeration process in Turkish manufacturing industries for the 1980-2001 period and has a negative effect on agglomeration; however the existence of scale economies and vertical linkages are important and shows that when considered with technological differences they increase the level of agglomeration.

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Is there an exit strategy from the crisis for Greek banks in the SEE? Preliminary evidence and lessons learnt from past banking crises

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Purpose: Inevitably, the banking systems play central role in the SEE transition economies. Banks have been the major catalysts of economic growth in the region. The SEE countries relied heavily on the financial sector to promote development. By the turn of 2000s, the Greek banks joined the foray eastwards, taking part in the rampant credit growth that fuelled the region's boom. As a result, they are now heavily exposed in the SEE region. Not only they invested in the region, but they have also become dependent on the return of these countries' economies to medium term stability and long-term viability. The rapid expansion in SEE that took place during 2002 to 2008 resulted in macro imbalances and funding deficits at system level, thus affecting the Greek banks' subsidiaries.

The global economic crisis, heralded as the worst since the 1930s, creates severe challenges for both the economic growth in SEE and the stability of the respective banking systems. Although it is too early to analyse in depth the impact of the crisis, data indicate that it spread to SEE. Loose home supervision, poor regulation, liquidity and solvency issues suggest areas of investigation and constraint the expansion and development of Greek banks in the region. Despite the negative developments in home country, banks' are strategically committed to SEE. At the same time officials try to inject confidence into the banking system while they publicly advise banks to be prudent in transferring bail-out funds to their subsidiaries. Situation in Greek banks' subsidiaries in SEE appears far from clear. The reality has brutally exposed the weaknesses in cross border banking. The credit crunch and its aftermath seem to be an alien landscape for Greek banks. Although we have not seen a failure of a major bank in the region, there are fears that banks may have hidden or ignored problems arising from exogenous or endogenous

shocks that will inevitably emerge at some point in the future. Understanding the channels through which events in one part of the world were transmitted elsewhere will be a small but important step forward. This paper aims to take stock of the current situation and examine - question the applicability of past banking crises' experience in the case of Greek banks in the SEE region. Although, each crisis has its own characteristics which make it difficult for students of past crises to apply lessons, there are remarkable similarities with past experience. The paper serves a dual purpose. Reviewing the unfolding of the recent crisis in the region and studying past crises aims at identifying common grounds with the situation experienced by the Greek banks. The real challenge concerns the path out of the crisis, while there is no guarantee that banks will find it. Eastern European economies present high external balances that constrain policy responses to the crisis. Non homogeneity in the region prevents a 'one size fits all' approach. Past banking crises episodes in the world where bad debts soared across the economies led to insolvent banking systems. Equally, a prolonged crisis could have serious economic, social and political consequences in Greece and the host countries where the banks' subsidiaries operate.

Research Methodology/Approach: Survey

Findings:

- Applicability of past banking crises of some benefit, literature and empirically wise
- Wide heterogeneity in SEE region prevents one size fits all approach
- Non existent past experience by Greek banks
- Empirical approaches relatively new, not thoroughly tested and restricted by data availability
- The complexity of the problem requires a comprehensive, multi-perspective assessment equally weighted between quantitative modelling and qualitative approaches.

Practical implications: Greek banking system viability and future prospects in the SEE region.

Keywords: Greek banking system, South East Europe, Banking crisis, Cross border banking

1. Introduction

The global economic crisis, heralded as the worst since the 1930s, creates severe challenges for the Greek banks in the SEE region. Banks enjoy a

special status and this brings special responsibilities reflected in the strings attached to the capital injections that take place in Greece. In return banks should be immune to crisis in order to keep lending flowing and contribute in the economic growth.

Crises are not a new phenomenon; they have been around for centuries. In recent years there has been a profusion of banking crises in industrial and developing countries. Although two economic crises may seem identical, the same questions recur. How Greek banks get into this crisis and how they can we get out of it?

This paper aims to take stock of the current situation and examine the applicability of past banking crises' experience in the case of Greek banks in the SEE region. The ultimate objective is to enlighten their exodus from the crisis tunnel.

Prerequisite to such multidimensional and complex task is to understand and evaluate the forces which shape the Greek banking market in the SEE context as banking crises are major of recessions' amplifiers. Section 2 describes the evolution of banking in the SEE economies while it monitors closely the Greek banks' expansion from the pre-crisis period up to the current situation. Section 3 surveys the plethora of banking crises pursuing their origins. The drive is to obtain an understanding of the factors that triggered crises. Recently, a number of econometric models have been developed recently aiming at analysing banks' resilience to shocks and detecting the vulnerability indicators that signal crises. In this regard, Section 4 briefly discusses the main quantitative approaches, namely stress testing and early warning signals. Finally, Section 5 concludes the paper. It discusses the identified symptoms with regards to the Greek banking crisis and proposes directions for future research.

2. Unfolding of the crisis in the SEE region

The countries of SEE experienced considerable economic growth[67] over the past years. Political and economic risk subsided, as witnessed by improved credit ratings and thus, increased FDI inflows. Greek banks have been a major investor in the region. The main reasons that motivated their expansion in SEE were:

- The foreseen decline in profit margins in the domestic market
- The banking principle 'follow your customer'
- A deep knowledge of the neighbourhood's economies and an

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[67] In 2007, growth in GDP in the region reached almost 6.3%, significantly higher than the Eurozone average value.

- Increased opportunity window due to the anticipated economic development of these countries in the medium-long term.

The end-result has been 'a very short history of a very rapid expansion'. Although the Greek banks' presence in the region started around 1993, a meaningful expansion was initiated in the early 2000s. Between 2002 and 2008, banks assumed a wave of 17 acquisitions while the respective assets grow by 58%.

A few studies attempt to explain the performance and profitability of the Greek banks' foreign subsidiaries. Kosmidou et al (2005) findings indicate that subsidiaries' profits were related to those of the parent bank, the differences in GDP growth and trade balance between Greece and the host country and the years operating in the host market. In a study on the profitability factors of SEE banks over the period 1998-2002, Athanasoglou et al (2006) suggest that almost all bank-specific determinants significantly affect profitability. The evidence regarding the macroeconomic determinants[68] remains mixed. Authors indicate significant differences across the region in terms of macroeconomic variables. Figure 1 depicts the situation among the countries in SEE and the evolution of GDP growth over the period 2005 – 2010.
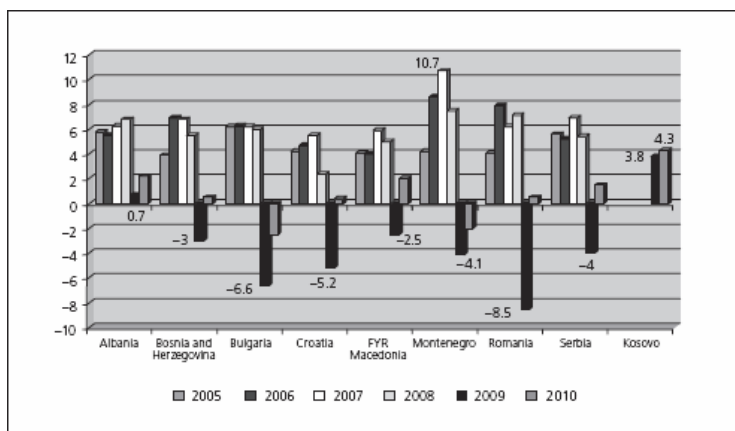

Figure 1: Real GDP in SEE, 2005-2010.
Source: IMF Economic Outlook - October 2009

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[68] The study captures the effect of the macroeconomic environment by variables such as inflation and real per capita income.

Bonin et al (2008) report that the banking sectors in the transition economies were underdeveloped, mainly due to the legacies of the centrally planned economies. Risk evaluation played no role in lending decisions. State control of banks, accumulated bad loans and high concentration ratios were the major inheritances from the past. In the early transition years, banking sectors began to develop during a period of macroeconomic decline and turbulence.

Rapid progress in bank privatisation and consolidation commences in early 2000s. However, the process was hardly smooth. Not surprisingly, these nascent banking sectors experienced severe crises (Bonin and Wachtel, 2005).

The main aspect of banking in the SEE was not the depth of crises but the speed of financial restructuring. Two interrelated phenomena can explain the rapid transformation:
- The regional countries' desire to become members of the EU and
- The expectation of quick EU convergence and ultimately the adoption of Euro made these 'under-banked' markets attractive to European banks once stability was attained.

The distinctive characteristic of the banking sectors in SEE is the emergence of foreign-dominated ownership. Virtually all countries exhibit high foreign-bank presence compared to developed markets (Bonin et al, 2008; Barisitz, 2008).

Pronounced role among the foreign institutions is played by the Greek banks[69]. The foreign bank penetration in SEE and the relative lending positioning of Greek banks is evident in Figure 2.

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[69] Greek banks make up four of Bulgaria's top 10 and three of Serbia's. Two of Romania's top 10 are Greek and they account for 15% of banking assets. For Bulgaria, it is 30% whereas in Serbia, Greek banks control more than 15% of assets.
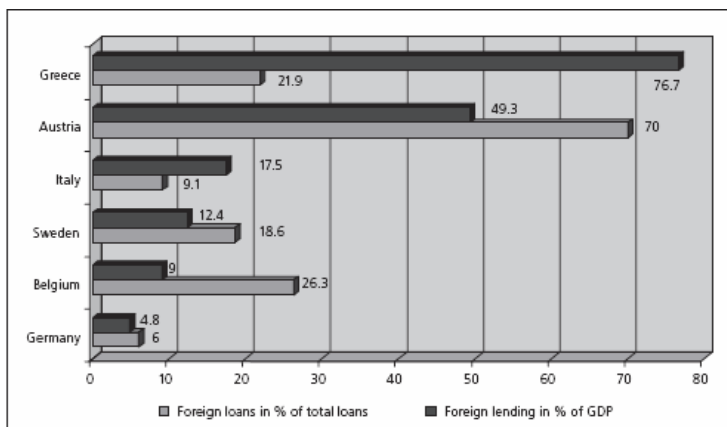
Figure 2: Foreign bank lending in Central and Eastern Europe, 2008.
Sources: Central banks, BIS, September 2009 and Bastian, J., 2010.

Inevitably, the banking sector in many transition economies developed remarkably quickly. But banks' are not immune to problems and do not always provide sufficient impetus for economic development. The market-based legislation did not lead automatically to prudential banking practices. The notion that competition would be enhanced by easy entry and the relatively new, often undercapitalised, banks placed an added burden on an immature regulatory structure (Bonin, 2008). Similarly, effective supervision did not follow automatically. The transition report of EBRD (2006) highlights the growth and diversification of banking systems in SEE since 2000. Further progress in financial deepening is considered feasible and desirable. Moreover, the past problem[70] of defaulting loans evident in almost all SEE economies seems to persist due to continuing lending practices.

Banks kept on searching aggressively for market share, primarily on the asset side. Foreign direct investments poured into the region in record amounts, and economic growth continued unabated. Although rapid credit increase might have long term growth benefits in general, it could also signal warnings of excessive risk taking and financial vulnerability stemming from overheated economies.
Well before the breakout of the global crisis in August 2007, the IMF (2005) warned about the risks of strong credit growth in Eastern Europe. A key question arising is whether the unsustainable pace in credit expansion is part of the ongoing financial liberalisation. A particular concern was that credit,

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[70] For the four major SEE countries the average in 1995 was 18.8% of the total loan portfolio.

encouraged by low interest rates, is largely being financed by bank borrowing from abroad instead of domestic deposits' accumulation.

In brief, the regional economies had really taken off rapidly. So when the global crisis hit, there was a feeling that they would not be affected. However, situation changed dramatically and the future outlook is far from clear. Figure 3 presents the sudden freeze in credit[71].
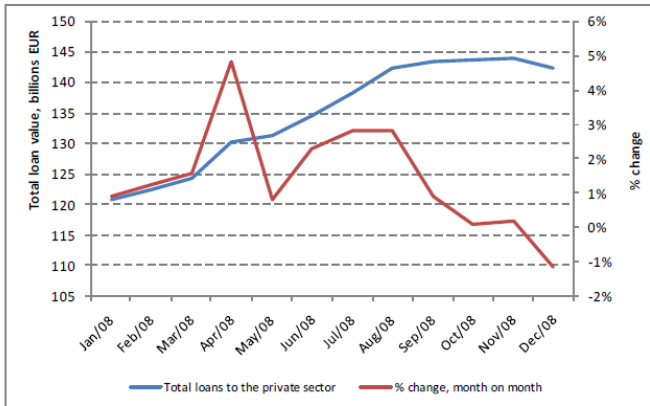
Figure 3: **Loans to the private sector in SEE have stagnated or declined at the onset of the crisis**.

Source: SEE Central Banks

Not surprisingly, revenues from SEE markets delivered a healthy boost to the Greek banks. But now institutions would have to deal with a precipitous drop in credit combined with a loss of confidence in the banking system.

In the beginning of 2009, a financial retrenchment was under way, the product of both market forces and political pressure on banks. The Greek central bank warned banks not to send bail-out funds abroad. State support is accompanied by explicit obligations to lend at home. On the other hand, the SEE monetary authorities pressure banks to resume financing the economy and reinforce their capital buffers. Certain measures were introduced to

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[71] In all countries, credit growth in the last period for which data is available was less than 1%. In many countries growth was even negative.

increase banks' liquidity[72], re-boost credit while encouraging lending in local currencies[73] and to prevent bank runs. However, the tools of the local monetary authorities in the region are limited. Tables 1-2, present an overview of the current situation.

Country	No. of banks	Assets (€bn)	No. of branches	No. of staff	Investment (€bn)	Parent Funding (€bn)	Loans to deposits (%)
Romania	5	16.6	901	11,004	1.1	5.9	214%
Turkey	2	15.3	500	10,647	4.5	1.3	144%
Bulgaria	4	12.5	735	10,234	1.2	4.4	198%
Serbia	5	4.6	535	6,425	0.6	1.4	182%
Poland	1	5.0	177	2,405	0.4	1.3	167%
Albania	2	1.7	134	1,385	0.1	0.3	131%
Ukraine	3	1.5	287	1,136	0.4	0.6	245%
Egypt	1	1.3	49	1,582	0.1	-0.4	62%
FYROM	2	1.1	90	1,461	0.1	0.0	101%
TOTAL		59.6	3,408	46,279	8.4	14.6	170%

Table 1: **Greek banks' foreign subsidiaries, 2009. Considerable investments in the region. The ratio of loans to deposits in most countries at alarming levels. The loan growth outpaced deposit growth as a result of the credit boom.**

Sources: Greek banks published financial statements, Bank of Greece.

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[72] Some central banks on the region (Albania, Romania and Serbia) have been cutting their main policy rates. Others have reduced minimum reserve requirements and reserve requirements for funds borrowed abroad (Bulgaria, Romania, Serbia).

[73] These aim at mitigating currency risk. Specifically, central banks demand more transparency from commercial banks and introduced tougher provisions on foreign-exchange lending.

Country	GDP (€bn)	Population (m)	GDP per capita (€k)	CPI (%)	EU member	Loan penetration (% of GDP)	Loans to Deposits (%)
Turkey	427	71	5.9	6.5%	No	40%	81%
Poland	300	39	7.9	3.6%	Yes	51%	92%
Egypt	131	80	1.7	8.0%	No	38%	62%
Romania	115	22	5.3	4.5%	Yes	39%	130%
Ukraine	80	46	1.7	12.3%	No	75%	205%
Bulgaria	31	8	4.1	2.7%	Yes	72%	141%
Serbia	30	7	4.0	9.9%	No	41%	118%
Albania	8	4	2.6	1.8%	No	36%	59%
FYROM	6	2	3.0	-1.0%	No	48%	84%
TOTAL	**1,128**	**279**	**4.0**	-	-	**49%**	**131%**
Greece	240	11	21.6	2.6%	Yes	105%	90%
Eurozone	10,880	328	33.2	0.2%	Yes	121%	118%

Table 2: **Leading macroeconomic indicators, 2009. The ratio of loans to deposits refers to the entire banking system of each country.**
Sources: UBS, IMF.

Bastian (2010) and Greek bankers argue that it would constitute a historical mistake for banks to abandon their operations in the region. Although, banks' strategy remains expansionary, there are certain constraints challenging the sector's stability:
- Negative developments in Greece[74].
- Deteriorating asset quality across the Greek banking system.
- Strained liquidity both in-house and abroad. The over reliance of subsidiaries on parent bank in terms of funding[75] is a major concern.
- Funding cost is elevated relative to European peers, severely affected by Greek sovereign spread widening.
- Capital, an essential prerequisite for expansion remains a longstanding issue.

Historically, the Greek banks pursued a hybrid strategy of acquisitions and organic growth in SEE. While there is a critique suggesting an opportunistic approach by bankers-desperadoes who paid astronomical prices to acquire SEE banks and then used funding from the parent or wholesale markets to

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[74] Greece has been compromised by challenging macroeconomics such as negative GDP growth and debt (as % of GDP) and fiscal deficit (as % of GDP) at record levels.

[75] Capacity for further centralised funding appears to be limited given that Greek banks have to wean-off from the ECB over reliance and rollover substantial wholesale funding debt in the following years. In the meantime, the wholesale sources dried up!

lend in the local economies, it is evident that Greek banks present fairly traditional business models. It may also be the case that the crisis has made Greek banks' diversification look smart.

The constraints discussed earlier both in-house and in the SEE context, urge the necessity of risks' re-evaluation. Greek banks may be required to place greater emphasis on capital and liquidity without compromising their growth prospects. Attempting to utilise lessons from the past, a review on the origins of banking crises follows.

3. A survey on the origins of the past banking crises

The recent financial turmoil has re-ignited the debate on crises' driving forces. Essentially, banking crisis[76] refers to a situation in which actual or potential bank failures induce banks to suspend the internal convertibility of their liabilities or which compels the government to intervene this by extending assistance on a large scale. A banking crisis may be so extensive as to assume systemic proportions. Caprio and Klingebiel (1996) indicate three general types of bank insolvency. Those limited to a single or a small sample of banks, which clearly are not systemic, overt banking system runs and a more silent form of financial distress. For the purpose of this study the definition is widened further as the Greek banking sector is not supposed to encounter systemic problems[77].

Financial crises are not unique. History is replete with crises and many of the same forces have often been at work in different crises (Demirgüç-Kunt, and Detragiache, 1998; Caprio and Klingebiel, 2003; Allen and Gale, 2007; Duttagupta and Cashin, 2008; Reinhart and Rogoff, 2009).
Most major banking problems in recent years have not originated on the liabilities side of balance sheets. Among the industrial countries, neither the banking crises in Finland, Norway, and Sweden in the early 1990s, nor the more recent banking problems in Japan were associated with runs on deposits[78]. Banking crises generally stem from the assets side of banks' balance sheets[79], usually from a protracted deterioration in asset quality. This

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[76] The definition follows the International Monetary Fund (1998).

[77] On the other hand it is believed that the crisis experiencing the Greek banks' is still unfolding or lies somewhere between the containment and the resolution phase.

[78] Among the developing countries, large withdrawals of deposits can be found in the banking crises in the 1980s and 1990s in Argentina, Philippines, Thailand, Turkey, Uruguay, and Venezuela.

[79] Of paramount importance is the role of banks in maturity transformation. Banks transform short-term deposits in long term loans. That makes them uniquely vulnerable to bank runs.

suggests that variables such as the proportion of nonperforming loans in banks' portfolios, large fluctuations in asset prices and indicators of business failures could be used to explain crisis episodes. Furthermore, banks can conceal problems. This information asymmetry problem makes banking inherently fragile and susceptible to runs.

Banking crises have been dated by researchers on the basis of a combination of events. Many authors argue that deteriorating market fundamentals lie at the core of banking crises (Gorton, 1988; Mishkin, 1996; Llewllyn, 2002). In this regard Thailand[80] constitutes the perfect example of a typical financial crisis. Similarly, Argentina twin crisis is linked to a hyperinflationary environment that was the product of fiscal accounts deterioration (Kaminsky, 1999). In the tequila crisis, the extremely high credit growth raised concerns on the asset quality of the banks. The boom-bust cycle in lending is also evident in Philippines[81], fuelled not only by capital inflows but also by reforms that entailed a dramatic fall in reserves. All those findings draw broad parallels to the current SEE case.

Aiming at identifying shared features among crises, it is apparent that there is correlation between excess leverage, asset prices, debt-service ratio and banks' failure. Many authors suggest that crises of all types had often common origins; the build-up of unsustainable economic imbalances, misalignments in asset prices often in a context of financial sector distortions. A crisis may be triggered by a sudden loss of confidence in the banking system, by disruption to credit or capital flows that expose underlying economic and financial weaknesses.

Macroeconomic instability has been an important underlying factor in many financial crises. In many cases, overly expansionary monetary and fiscal policies have spurred lending booms which have driven up equity and real estate prices to unsustainable levels. In addition to domestic conditions, external factors have also played a role in crises, especially in emerging market economies.

Movements in interest rates[82] in the developed countries have become increasingly important to emerging market economies worldwide, reflecting the increasing integration of capital markets.

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[80] At the onset of the crisis one can distinguish a slowdown in growth following a prolonged boom in economic activity fuelled by heavy FDIs and rapid credit expansion.

[81] The rapid credit expansion was an important contributor to the stock rally and the real estate bubble. Consumer credit increased, fuelling a surge in consumption thus leading to a deterioration of the current account.

[82] Sustained declines in interest rates have induced surges in capital flows to emerging market countries, as investors have sought higher yields and the creditworthiness of externally indebted countries benefited from lower rates.

Caprio and Klingebiel (2003) database covers 86 episodes of bank insolvency. Authors find that both macroeconomic and microeconomic factors have figured in bank crises. Hausmann and Gavin (1995) emphasize the macroeconomic roots in a study of crises in Latin America. The authors do not imply that banking crises are always a macroeconomic phenomenon, but they use the following analogy:

> *"When macroeconomic forces place great strain on the banking system, the weakest banks are the ones most likely to fail, but it is the macroeconomic tension, as much as the weakness of individual banks, that causes the failures" (p. 27).*

Other findings suggest that a volatile fiscal policy is an important shock to a banking sector and that 'lending booms often end in tears'. Apparently, the good times are bad times for learning. Even, small adverse shocks can drive leveraged banks in insolvency.

A number of analysts have made theoretical attempts to uncover the main cause of banking crises. Among them the debt-deflation school of Kindleberger (1978) contend that although bank crises may not cause recessions, they certainly make them worse. Increasingly, financial liberalisation is mentioned as a cause of bank insolvency and in many cases a variety of regulatory and bank-specific management factors creeps behind banks' distress (Reinhart and Rogoff, 2009).

Hausmann and Gavin (1995) argue that excessive credit growth is a primary factor behind banking crises. Usually it reflects a decline in the credit standards of banks. Similar results can be found in Diamond and Rajan (2005). In a study of liquidity shortages and banking crises, authors suggest that liquidity and solvency problems interact and can cause each other, making it hard to determine the cause of a crisis.

Claessens (1990) results indicate that financial crises can have multiple causes either fundamental (fiscal policy, slowdown in GDP growth, increase in interest rates or inflation) or exogenous. Similarly, Cull and Peria (2007) results indicate that most banking crises have macroeconomic roots and occur in environments troubled by fiscal situations (twin deficits), a fact that could hamper ability to deal with such episodes effectively.

Although, the country-specific factors are equally important, Llewllyn (2002) suggests several common elements[83] visible in most crises. Causes of such

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[83] These are the volatility in the macro economy, the inheritance of structural weaknesses in the economy and financial system, hazardous banking practices and incentive structures and moral hazard within the financial system, ineffective regulation, weak monitoring and supervision, the absence of effective market discipline on banks, and structurally unsound corporate governance mechanisms within banks.

crises are complex and a myopic focus on single factors misses the essential feature of interrelated and multidimensional causal factors. Although macro-instability has been a common feature, and may often have been the proximate cause, banking crises usually emerge because instability in the economy reveals existing weaknesses within the banking system.

Reinhart and Rogoff (2009) engage in a comparative analysis of almost all post-war banking crises. Their basic message is simple: "we've been here before since the development of money and financial markets". Each new crisis presents remarkable similarities with past experience. Excessive debt accumulation, whether it be by governments, banks, corporations or consumers it often poses greater systemic risks than it seems during a boom. Authors demonstrate that the antecedents of banking crises in rich countries and emerging markets have a surprising amount in common[84]. Periods of high international capital mobility observed in emerging economies have repeatedly produced banking crises. When foreign capital comes to a sudden stop, 'economic activity heads into a tailspin'.

In the crisis resolution analysis, Laeven and Valencia (2008) indicate that better institutions are uniformly positively associated with faster recovery. Results are in agreement with Berger and DeYoung (1997) who find that cost efficiency[85] in banks is an important indicator of future problem loans. A vast body of research on the causes of bank failures states that institutions tend to have large proportions of nonperforming loans prior to failure. Inevitably, the asset quality is a statistically significant predictor of insolvency (Demirgüç-Kunt, 1989).

Among the critique, the crisis has demonstrated the inadequacies of analytical tools when it comes to predicting the future. The following section delves into the specifics of the quantitative approaches to banking crises.

4. Econometric modelling of banking crises

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[84] There are broadly similar patterns in housing and equity prices, unemployment, public revenues and debt. Other macroeconomic time series such as income, consumption, government spending and interest rates exhibit higher volatility in emerging markets.

[85] Cost-inefficient banks may tend to have loan performance problems for a number of reasons, ie banks with poor management may have problems in monitoring costs and loan portfolio. Losses of capital may be generated by both these phenomena. Alternatively, loan quality problems may be caused by exogenous factors, such as regional economic downturns. However, there is evidence suggesting that the major risks facing financial institutions are caused internally.

Although theory does not provide an unambiguous answer to the causes of financial crises, the literature does clarify to a certain extent the potential symptoms of an upcoming one.

The subprime turmoil demonstrated that the roots of financial problems remain the same (Calomiris and Gorton, 1991; Reinhart and Rogoff, 2009) and that banking crises generally stem from the assets side of balance sheet. Certain variables[86] could be used to identify crisis episodes.

Sharing the views of Till Guldimann, one of the architects of VAR, it is argued hereby that risk management is about the things we don't know that we don't know. The later highlights the fact that most state of the art modelling in risk management leads to the illusion that almost all risks can be quantified. However, models still deserve their place. While it is expected that the ongoing crisis presents an enormous challenge to improve the econometric modelling by incorporating non-statistical ways of thinking, we embark in an exploration of the most current approaches, namely the banks' stress tests and the early warning systems (EWS). The following section attempts to critically review the macro stress testing methodologies while trying to establish linkages to the case under investigation: the Greek banks' crisis in the context of the SEE region.
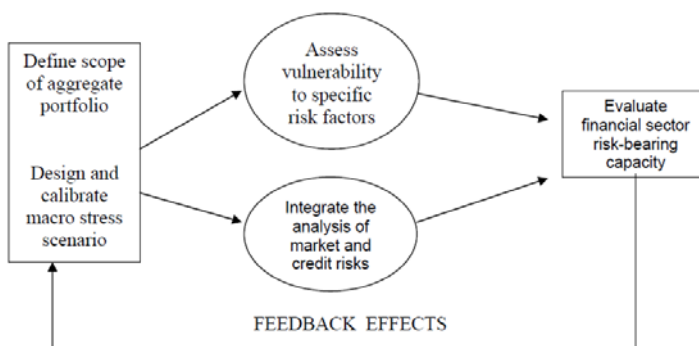
4.1 The Stress Tests

Macro stress-testing, in the banking literature, refers to a range of techniques used to assess the vulnerability of a financial system to 'exceptional but plausible' macroeconomic shocks. The temporal connections between banking crises and the real economy indicate the importance of stress tests.

Essentially, a stress test is a 'what if' exercise which considers what might happen to individual banks or the financial system when, and if, certain risks materialise. The effects can be measured using two alternative techniques, the sensitivity approach or the scenario approach[87]. The purpose is to assess banks' resilience and identify potential vulnerabilities at an early stage. Appraising the potential implications of risk factors enables financial stability and shock-resistance through the introduction of measures. The following Graph presents the stages of macro stress tests.

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[86] For instance, the proportion of nonperforming loans in banks' portfolios and fluctuations in real estate and stock prices.

[87] The sensitivity approach assumes a change in a particular risk factor, without specifying the reason and independently of other risk factors, and the impact is quantified. The scenario approach considers several underlying risk factors associated with a specific portfolio or a specific event. Under both approaches the shocks can be hypothetical or based on historical experience.

Graph 1: Overview of stress tests.

The first step is to define the scope of the analysis in terms of the relevant set of banks and portfolios. Secondly, the analyst should design and calibrate the stress scenario; determine what risks will be stressed and specify the scenarios. This will assist in deciding upon the methodology to be used and the data requirements. Next follows the attempt to quantify the direct impact of the simulated scenario on the balance sheet of a bank or the financial sector, by focusing on forecasting financial indicators under stress. The interpretations of results follows in order to evaluate the overall risk-bearing capacity of the financial system and account for potential feedback effects within the financial system and from the financial sector to the real economy.

In most cases historical data is employed to evaluate the sensitivity of banks' balance sheets to various shocks. Then, the estimated coefficients are utilised to simulate the impact on the financial system of possible stress scenarios in the future. Three broad techniques have been used in implementing the stress testing approach:
- Time series analysis;
- Panel data regressions, and,
- Structural models

Sorge (2004) distinguishes two main methodologies for stress testing, namely the 'piecewise' and the 'integrated'[88] approach.

Literature indicates that a number of methodological issues still need to be resolved. For instance, one of the drawbacks of time series models lies in the

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[88] The piecewise approach evaluates the vulnerability of banks' to single risk factors, by forecasting several indicators such as non-performing loans, capital ratios and exposure to either exchange rate or interest rate risks under various macroeconomic stress scenarios. The integrated approach combines the sensitivity analysis of the financial system to multiple risk factors into a single estimate of the probability distribution of aggregate losses that could materialise under any given stress scenario.

fact that they aggregate the microeconomic defaults that lead to financial stress. On the other hand panel data regressions can account for bank-specific factors that may be highly correlated with financial stress at a particular bank.

Howard (2008) study addresses the data problems encountered and suggests possible solutions. Regardless of methodology, there is certain information that forms the basis of stress testing without which the entire process becomes impossible. That is macroeconomic data[89] and financial statement data. The key risk factor, which accounts for most of the potential balance sheet losses, is credit risk. Consequently, the most common measure of financial sector vulnerability used in macro stress-testing is the ratio of potential losses over available capital.

Boss (2002) model on the Austrian banking sector captures credit risk in relation to macroeconomic variables, such as GDP growth, inflation and interest rates. Results indicate that banks' risk-bearing capacity is adequate enough. The crisis scenario, under which a three-year recession is assumed, confirms that while considerable losses to the banks' credit portfolios are expected, these would still be sufficiently covered. Similar to the Greek case, a 95% of Austrian banks overall capital requirements are traceable in credit operations. Furthermore the Austrian banks are also heavily exposed in the SEE[90]. In this regard, the results of the study become extremely useful as they have consequences, though indirect for the Greek banks.

In 2005 the IMF conducted for the first time in Greece a financial sector assessment program (FSAP) that considered stress-testing. Kalfaoglou (2006) review of the exercise indicated that banks are sufficiently resistant to shocks and the domestic banking system can withstand the adverse scenarios considered. Similar to Boss (2002), Kalfaoglou (2006) emphasises that credit risk remains the most important risk in the Greek banking sector. Despite the satisfactory stress test results[91], the cross-border expansion of banks increases their vulnerability to external shocks which, in turn, requires 'better and more intensive risk management practices.'

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[89] In terms of the macroeconomic data the minimum requirements are estimates of GDP. Depending on the methodology to be employed, the explanatory or stressed variables and the required level of precision, other useful data concern national accounts by economic sector, inflation, unemployment, current account balance, nominal interest rates, foreign direct investment and money supply.

[90] Greek and Austrian banks are most heavily exposed to countries in SEE. They had the highest share of lending as a percentage of GDP of all EU countries in 2008, at a staggering 76,7% and 49,3%, respectively.

[91] Results indicated that Greek banks stood well-provisioned and well-capitalised. However, findings correspond to the time period considered, indicating that the exercise should be repeated in a regular manner to ensure that results remain valid over time.

The depth and duration of the current financial crisis has led many authorities to question whether stress testing exercises were sufficient prior to the crisis and whether they were adequate to cope with rapidly changing circumstances. The results of recent macro stress-tests have been criticised of depicting an either too rosy or too bleak picture of banking system vulnerabilities (Sorge, 2004; Haldane, 2009; Alfaro and Drehmann, 2009).

Considering the UK banks, Haldane (2009) indicates that during the crisis the models proved to be wrong in a fundamental sense.

> *"The only model that is not wrong is reality and reality is not, by definition, a model. When tested against real stress, large parts of the financial system seized-up and a number of financial institutions failed" (p.1).*

The main reasons behind models' failure are the 'disaster myopia'[92], the network externalities[93] and the misaligned incentives between bank management, supervisors and investors.

Alfaro and Drehmann (2009) results indicate that the structural assumptions underlying stress testing models do not match output growth around many crises. Unless macro conditions are already weak prior to the eruption of the crisis, the vast majority of stress scenarios that relied on historical data are not severe enough.

Clearly, a crucial aspect when employing stress tests is the selection of scenarios. Stress tests aim at exploring the impact of extreme events[94]. However, if these events are in general, regarded as extremely unlikely or implausible, little importance will be attached to the results of such stress tests. Thus, a key challenge in any stress test approach is how an adverse change in macroeconomic variables feeds in the model. Criticism is also directed to the choice and calibration of the stress-scenarios. However, significant under or overestimation of systemic risks can also be ascribed to the use of simplified methodologies often driven by data constraints.

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[92] Disaster myopia refers to agents' propensity to underestimate the probability of adverse outcomes, in particular small probability events from the distant past.

[93] Under this concept, any asset portfolio is thought as a financial network. In this regard, the balance sheet of bank is a network with nodes defined by the assets and links defined by the correlations among those assets. Similarly, the banking sector constitutes a network with nodes defined by the individual banks and links defined by interconnections between those banks. Pre-crisis measures of balance sheet risk are likely to be significant under-estimates.

[94] The IMF's definition requires to use macroeconomic scenarios that are exceptional but plausible but there is no clear definition of what exceptional and plausible ultimately mean.

Moreover, models that lack robustness in terms of statistical relationships tend to break down during crises. In general, while substantial progress has been made in the last few years in developing quantitative techniques a number of methodological challenges remain open for future research.

4.2 The Early Warning Systems

In view of the costly adjustments that economies undergo in the eve of crises, there has been considerable interest in identifying configurations of variables that can serve as early warning signals of crises (Kaminsky et al, 1998; Kaminsky, 1999; Vlaar, 2000).

A commonly used approach to constructing an early warning system is by identifying a set of variables whose behaviour prior to episodes of banking crises is systematically different from that during 'tranquil' periods. By closely monitoring these variables, it may be possible to detect patterns similar to those that in the past have preceded crises. Thus, the challenge of the approach lies in identifying the relevant variables to monitor.

The major approaches used under EWS are the signals approach, primarily a bivariate method and the limited dependent regression models (logit or probit).

In the signal approach each variable's average level (or growth) in the period preceding the crises is compared to that in calm periods. If the variable behaves differently before a crisis, an extreme value[95] of this variable provides a 'warning signal'. A composite leading indicator can then be constructed as a weighted average of the individual signals.

The procedure appears to produce better results when there is clear distinction between crisis episodes and periods of tranquillity. An issue arises when the signals are combined, is that the optimal weights for the individual signals cannot easily be assessed if the signals are correlated. However, if one is mainly interested in finding vulnerabilities, without focusing on exact probabilities, the method may be appropriate since it points to the most significant variables (Vlaar, 2000).

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[95] The question of what value should be considered as extreme is dealt with weighting the percentage of crises predicted against the percentage of false signals. The threshold level can either be the same for all countries, or based on the country-specific empirical distribution of the variable.

In a seminal effort, Kaminsky et al. (1998) use the signals approach[96] to predict currency crises using monthly data for a sample of 15 developing and 5 developed countries during 1970–95. Among the variables that appear to have the most explanatory power are the real exchange rate deviation from a 'deterministic' trend, the occurrence of a banking crisis, the growth rates of exports, the stock prices, the money supply and the domestic credit to GDP. Country-specific threshold levels for the economic variables have the advantage that national elements are taken into account. In a later study, Kaminsky (1999) examines 102 financial crises in 20 countries and concludes that the Asian crises are not of a new variety. Findings indicate that the Asian crises in 1997 as well as previous crises occur when economies are in distress thus making the degree of vulnerability of the economy a useful indicator of crises. Author indicates that forecasting the exact timing of a crisis remains an elusive goal, though it should be stressed that the core of the approach is to construct a system that enables monitoring whether a country[97] may be slipping into a crisis situation.

In the limited dependent regression (logit or probit)[98] models, the crisis indicator is modelled as a zero-one variable, as in the signals approach. The explanatory variables are usually included in a log-linear fashion. Vlaar (2000) findings suggest that the regression approach has several advantages compared to the signals approach as the method considers the significance of all variables simultaneously. Thus, the additional information of new variables can be easily checked. A disadvantage of this approach might be that the impact of an individual variable is less easily detected. Due to the specification characteristics of logit or probit functions, the contribution of a particular variable depends on all the other variables as well. It appears that a combination of data from industrialised and emerging market economies tend to avoid poor estimation problems. Frankel and Rose (1996) use the probit model to estimate the probability of crisis[99] in an annual sample of 105 developing countries covering the period 1971 to 1992. They conclude that the probability of crisis increases when output growth, FDI (as % of total debt) and reserves are at low levels in cases where domestic credit growth

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[96] In their study, a currency crisis is defined to occur when a weighted average of monthly percentage nominal depreciations and monthly percentage declines in reserves exceeds its mean by more than three standard deviations for that country.

[97] The core of the different early warning indicators is the degree of distress of an economy. It is captured by examining what and how many sectors of the economy are affected by shocks whilst examining the severity of those shocks.

[98] The approach ensures that the predicted outcome of the model is always between zero and one. Therefore, the prediction of the model(s) is easily interpreted as the probability of a crisis.

[99] A crisis is defined as a depreciation of at least 25%, exceeding the previous year's depreciation by at least 10%. However, according to the definition of Frankel and Rose (1996), there were no crises in 1997!

and foreign interest rates are high or when the real exchange rate is overvalued.

In a recent study Rose and Spiegel (2009) modelled the causes of the 2008 financial crisis with its manifestations, using a MIMIC[100] model. Their analysis is conducted on a cross-section of 107 countries and focuses on national causes and consequences of the crisis. Despite the fact that a wide number of possible causes has been used in a flexible statistical framework, they were unable to link most of the commonly-cited crises' causes to their incidence across countries. The negative findings in the cross-section render scepticism on the accuracy of EWS. Perhaps, the poor results can be attributed to the fact that causes of crises differ among countries, thus it is difficult to find a common statistical model to predict them. It follows that any analysis of specific financial sectors in individual countries, or any comparison of financial institutions across a range of different countries, needs to account for the various exogenous factors specific to those sectors and countries (Drake at al, 2003). This is definitely the case in the banking sectors of SEE countries' where considerable external factors appear to have an impact on banks. Thus, any modelling attempt should incorporate the potential impact of geopolitical, economic and regulatory factors in the region.

An assessment of the EWS by Sahajwala and Van den Bergh (2000) indicate that aggregated data may conceal problems within individual banking institutions. Most of the risk assessment and EWS appear to work best in the case of small and average-sized banks that essentially engage in traditional banking activities. Not surprisingly, Sahajwala and Van den Bergh (2000) survey of stress tests and early warning systems reveals that leading indicators of bank problems are the various asset quality indicators. Liquidity, profitability and solvency constitute either concurrent or lagging indicators of bank distress. The later reinforces the fact that the first signs of bank problems can often be detected in the asset quality indicators.

Banking crises are more difficult to identify empirically because of the nature of the problem and partly because of data non-availability. Unlike currency crises[101], the lack of high-frequency data that could be used to mark the onset of banking distress in a consistent manner makes the construction of leading indicators more difficult. Furthermore, the dating of banking crises is much more approximate than that of currency crises as it depends on the

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[100] Acronym stands for Multiple Indicator Multiple Cause model. The model combines changes in GDP, the stock market, country credit ratings and the exchange rate. Authors included over sixty potential causes of the crisis, covering categories such as asset price appreciation in real estate and equity markets, international imbalances and foreign reserve adequacy, macroeconomic policies and institutional and geographic features.
[101] In currency crises the availability of high-frequency data such as interest rates and exchange rate movements make the dating of crises relatively straightforward.

occurrence of certain events. The argument suggests that it appears extremely difficult to identify a set of indicators that could detect future crises sufficiently early and with a certain degree of certainty (Berg et al, 2004). Even though the search for reliable crisis predictors may seem a hopeless task, it is worthwhile to investigate whether there are variables systematically associated with vulnerability to the current banking crisis.

The survey of Berg et al (2004) reinforces the view that EWM are not accurate enough to be used as a sole method of predicting crises. Thus, holistic, country-specific assessments[102] based on all available qualitative and quantitative information should be used in parallel to early warning models.

5.   Conclusions

By its nature, banking is conducted on the basis of expectations about the future state of the economy. In view of the SEE prospects, Greek banks joined the foray eastwards, taking part in the credit boom that fuelled the region's growth for several years.

The subprime crisis has spread rapidly and the SEE was among the regions most adversely affected. It also highlighted the inherent fragility of Greek banks' business models suggesting a lack of reaction to changing market conditions. Despite the negative developments manifesting in fiscal crisis at home and a set of constraints, Greek banks' are strategically committed to SEE.

However, the challenges facing the heavily exposed financial institutions do not originate solely in balance sheet factors. Greek banking groups constitute regional economic stabilisers and drivers of economic growth. This intensifies the essence for future research that will forcefully address the current banking distress, appreciate the severity of the problem and will shed light in the crisis' exodus process.

Certainly, banking crises are not a new phenomenon. A long literature has been devoted to identifying the causes of banking crises. The global database undermines the single-cause theories and finds an important role for both macroeconomic and microeconomic factors. However, each crisis has its own characteristics. Therefore, an array of exogenous and endogenous factors should be analysed, in the broader geopolitical and economic context of SEE considering the fact that the regional economies do not represent a homogenous sample.

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[102] These could derive from the analysis of country experts who consider a broad set of quantitative and qualitative factors, ranging from macroeconomic variables to the strength of the banking system and the political stability.

Identifying vulnerability indicators that could signal banks' crisis can provide valuable insight on the research development. Thus, a proposed future direction is to explore this relatively new strand of literature not tested empirically in the case of Greek banks. The survey findings support the view that EWS models are not accurate enough. Integrated by stress tests they may form a useful tool that could enhance our understanding. It is plausible to conclude that comprehensive, country-specific assessments based on all available qualitative and quantitative information, should be used in chorus with the proposed modelling methodologies. Given the complexity of the multidimensional problem and the inherent difficulty to 'see' inside the banks' veil, a qualitative approach is suggested as an essential complement to the quantitative ones.

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INFORMATION AND COMMUNICATION TECHNOLOGIES

Service Oriented framework for IPv4 to IPv6 Transformation

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Abstract. The target of 4 to 6 Transformation is a research field and business process related to the network infrastructures migration from IPv4 to IPv6. Currently only about 8.6% of the IPv4 address space is free therefore that process could be considered inevitable. The migration to the new protocol could be pretty expensive for the network operators and extremely disruptive for the end customers. The Project aims to deliver an open framework capable of handling the migration process. The framework consists of three major components – Business Transformation Logic (BTL), Network Inventory and Service Transformation. Each of the components extends the Fulfillment, Assurance and Billing (FAB) Model and could be easily integrated with the current Operation Support Systems (OSS).

Keywords: IPv4 to IPv6 network transformation, OSS, FAB model, Service Oriented Framework

1 Introduction

This paper describes the architecture proposal for an open service oriented IPv4 to IPv6 network transformation framework that will extend the Fulfillment part of the current OSS solutions. The prospect is developed under the 4to6TRANS project initiative. The project aims to deliver open source tools for IPv4 to IPv6 network migration to all kinds of network players throughout Europe.

Currently IPv6 is matured enough and is already widely supported by the network industry vendors and software manufacturers. Most of the Operation Systems, Browsers, Email Clients, Web and DNS Servers already support IPv6. The share of free IPv4 address space is getting smaller and it is expected network providers to migrate their current services and subscribers to the new protocol [1]. Nevertheless, still a real migration to the new protocol does not occur. It will be costly and extremely disruptive, which is the major factor impeding its real start. Another reason is that currently, there are no Operation Support Systems tools, software, commercial and open platform able to handle similar transition. The reason for that is the fact that IPv6 as IPv4 is just a technology. It provides new opportunities and features but does not directly provide new services that usually are the market driver. It is quite difficult

in the current market situation somebody to invest significantly in such migration. The operators do not want to migrate to IPv6 because it will be costly, current network is already too complex and their current OSS won't able to handle. From the other perspective OSS vendors does not want to invest significantly and to rework their products to support the new protocol without a direct purchase orders by the operators. So in the end we have a chicken and egg situation.

With 4TO6TRANS initiative the project authors would like to push a bit the industry and to show that such migration is possible with the right knowledge, tools and approach.

2   4TO6TRANS Project Concepts and Objectives

Facing that problem, realizing that similar network migration task being extremely complex the project authors propose a novel 4to6TRANS framework to be created, having the power, flexibility and ability to model the current services, to speak with the network devices and to follow certain business logic during the transformation process.

The framework architecture consists of several Application Programmable Interfaces build around a relational database and following the principles of Service Oriented Architecture. Since such a job is quite complex and requires a lot of effort and resources the framework and its tools will be realized as an Open Source Project under the 4to6trans initiative.

The framework is supposed to give the possibility to the Network Operators to perform the transition in controlled and automated fashion. The final project output will be of great help to a big number of Internet Service Providers, Cable, Telecoms and Mobile operators to optimize the transition process and to reduce the loss of service periods in their networks. From the other perspective the end users won't experience a significant loss of service during that service transition periods.

The project focuses on service transformation of ISP residential clients, but also on Inter ISP Border Gateway Protocol (BGP) peering and corporate client services. The most common current ISP architecture is based on Multi Protocol Label Switching (MPLS) backbone throughout service provider infrastructure and several service clouds build around it. The framework will be robust and flexible enough to handle easily the communication with great diversity of network devices as routers, switches, radius/diameter servers, Policy Control Points, xDSL modems, WiMax base stations and IPTV platforms.

The residential services might be:
- Internet Access incorporated with Hosting, Email and AntiX
- IP Telephony
- IPTV

The business services might be:
- Internet Access (Email, AntiX, Hosting)
- Data Virtual Private Network (VPN) between the company locations (MPLS L2 or L3 VPN)
- IP Telephony Solution

- Site to Site encryption
- Remote Access

As a final result the framework shall be able to transform the described IPv4 based services and platform to an IPv6 such if IPv6 is supported on that platform. If the protocol is not supported a transition methodology shall be proposed and configured on the devices of the network operator.

For the purpose will be specified and created several open application programmable interfaces (API) able to model the transformation process and several GUI tools to be used by the OSS designers and OSS end users for an easy API manipulation.

The first stage of the project is the specification of the framework's API. The API's are grouped in three major groups.

- Business Transform Logic (BTL)
- Network Inventory
- Service Transformation

The output of that phase is:

- Detailed framework architecture specification
- Network Inventory APIs software specification
- BTL APIs software specification
- Service Transformation APIs software specification

The second phase is APIs creation. Depending of the specification the APIs will be written in different software technologies. For example:

- BTL might be written using Open Source Service Oriented Architecture technologies.
- Network Inventory might be created around a relational database using the procedural language built in the database itself.
- Service Transformation able to model the communication with the network devices.

The outputs of that phase will be:

- Network Inventory APIs source code
- BTL APIs software source code
- Service Transformation APIs source code

The third part of the project is on testing and integrating the framework with real network devices. Several network architectures will be simulated in a lab environment. One of the project objectives is to test the API's against different network vendors. Therefore several equipment vendors will be contacted and framework interoperability tests will take place.

- The goals that shall be achieved in this phase are:
- Perform Inter vendor Network Discovery
- Perform Inter vendor Device/Service Upload
- Model certain service business logic through workflow creation

Transform IPv4 services and subscribers to an IPv6 following certain business logic. The outputs will be:

- Network Discovery documentation
- Network Upload documentation
- IPv4 to IPv6 Service Transformation Prove of Concept Tests documentation

3 State of the Art in the Field of the Current OSS

3.1 Current Standards and Specifications

The 4to6trans project follows the general concepts of the OSS (Operations Support Systems) based on the ITU-T recommendations and best practices proposed by the TMforum. Fig. 1 presents the FAB (Fulfillment, Assurance and Billing) model part of the E-tom model architecture [11], [12].
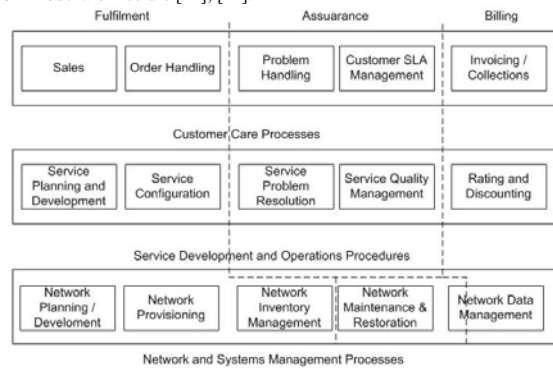

Fig. 1. Fulfillment assurance and billing model

The 4 to 6 transformation framework extends the Fulfillment part of the FAB model. The BTL will be added to the current "Service Planning and Development" and "Service Configuration' components. The current "Network Inventory" will be extended with the objects needed for the service transformation. The Network Provisioning will be extended with the "Service Transformation API".

3.2 Other Similar Solutions

Currently there are many OSS systems following the recommendations of the TM forum and delivering some of the components of the fulfillment branch of the FAB model. These platforms could be classified as platforms produced by Network Equipment Vendors that support only their equipment and independent OSS vendors that support the equipment of many vendors. Among the first group are companies like Cisco, Eriksson, Nokia, Siemens, Juniper, Huawei and many other network and telecom equipment vendors. In the second group are companies like Amdocs, Telcordia, Comptel, Sigma Systems and many others.

From the perspective of 4 to 6 service and device configuration transformation, considering the fact that most of the Network and Telecom operators have services realized on the equipment of many vendors we consider that the first group of OSS systems could not properly handle the process. Some of the companies' that are part of the second group OSS software vendors are producing solutions that could be considered as a state of the art in the OSS business field. Unfortunately neither of those companies targets seriously the IPv4 to IPv6 transformation process. Those platforms neither have an automated device upload, nor an automated discovery process. Usually once the network resources are entered into such system they could not be easily changed.

Those solutions may have network inventories, workflow managers and service activations but neither of those could handle the complexity of such complex service transformation.

4 Progress Beyond the State of Art

The 4to6TRANS project aims to deliver a software framework and practical guidelines for smooth and controlled migration to IPv6 with minimal loss of service. All Internet Service Provider, Telecom, Cable or Mobile operator shall sooner or later migrate to IPv6. Each one of those organizations will benefit greatly from the proposed service transformation platform. Since such migration will directly reflect to each and every customer of those organizations we may conclude that most of the population of the European Union using Internet Services, Mobile Services or data connectivity will benefit indirectly from the project outputs. Currently there is no product or platform able to handle such a complex migration task. This section will identify the progress beyond the state of art that will be achieved through the successful completion of the 4to6TRANS project.

4.1 Solution Architecture

The solution architecture consists of several layers (fig.2). The upper layer provides an interface for northbound integration with external systems and interfaces. That is the layer from which the framework receives the Service transformation Orders. On the next layer reside two of the main framework components the BTL and the Network/Service and Subscriber Inventory. The second layer components are able to communicate between each other through an open APIs and also with the upper and the lower layers. In that layer resides all polices and rules for service transformation. It contains the logic behind the transformation process. It also contains all the data for the network subject of transformation. The lowest layer main purpose is to process the request from the upper layer and to the network. It shall handle different communication protocols with different kinds of network elements.
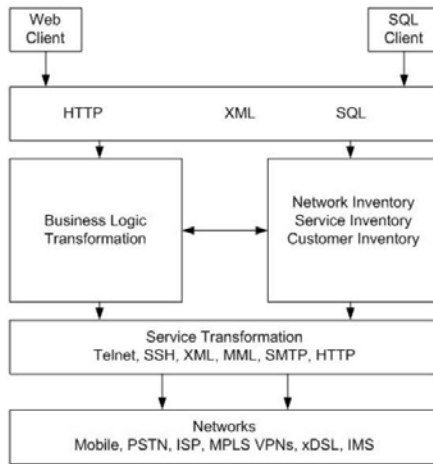
Fig. 2. Solution Architecture

4.2 Device Discovery

One of the main goals of the project is to have an automated upload of the device configurations into the network inventory. Such process will save large amounts of time to the network providers prior to the transformation phase. Therefore network discovery algorithm has to be implemented into the system. As an initial input prior to the discovery start into the system has to be entered an initial IP address and a stop rule. For example if MPLS P router is discovered the discovery process shall stop. Then it has to analyze the outputs from certain commands and SNMP MIBs in order to determine the device neighbors. Once the neighbors are identified the system will login to them, will identify their neighbors and continue the discovery process. Once certain device is discovered the Network Inventory will perform a full upload of that device. The discovery algorithm has to stop in case the device is already discovered or in case the stop rule is resolved.

4.3 Device Upload

Devices upload aims to model router's logical service model into the network inventory. Network inventory has to be populated only with a subset of the device configuration that will be needed by the BTL for a successful transformation. For the

purpose the transformation platform has to communicate with the device through a set of standard or proprietary protocols. Such protocols could be CLI (Telnet, SSH), SNMP or MML. Clearly, there will be a preference for SNMP MIB browsing rather then the rest of the protocols.

The upload might be triggered for a group of devices (e.g. upon a network discovery completion) or an individual one (e.g. manual request) the process will systematically interrogate the individual devices to obtain the necessary data to achieve the representation in Inventory.

There exist a number of discrepancies in the way the devices return the requested information even across different models/platforms belonging to the same manufacturer. Therefore, the information gathering process will need to be resilient enough to deal with different response formats.

Once the information is gathered from the network device, it will be processed and the relevant data modeled into Inventory. Figure 3 displays a high-level view of the process.
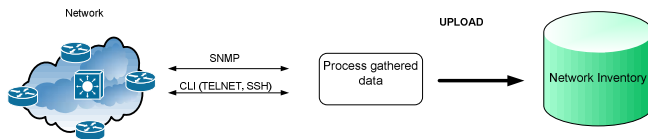

Fig. 3. Upload Process Overview

4.4 Network/Service Inventory

Once the upload process is finished the network inventory has to contain a logical data model of the network and its devices. The inventory has to contain all the information needed to the BTL in order to execute a certain transformation workflow. A simple logical model may have hierarchical structure similar to the one on
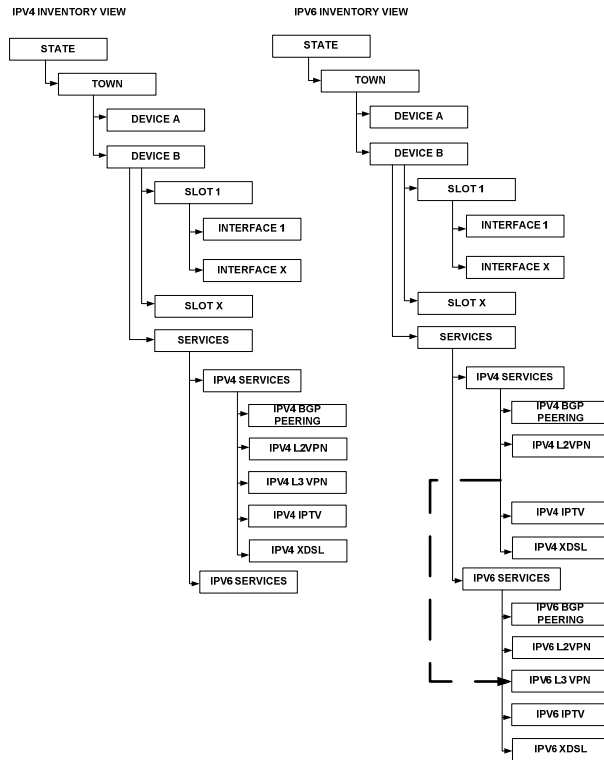
fig.4.

Fig. 4. In the left is presented an IPv4 Inventory and in the right Network/Service Inventory
after a successful transformation to IPv6

4.5 Service Automation

Once the inventory is populated with the logical model of the network its devices and services. Then that information shall be used for as input parameters for the transformation logic. Service automation in the 4TO6TRANS will be achieved

through the Business Transform Logic API. That part of the solution has to transform the IPv4 services into IPV6. The first main goal of the Business Transform Logic is to be able to model and execute a certain transformation algorithm. High level overview of an example transformation algorithm (workflow) that shall be modeled through this GUI is presented on Fig 5.
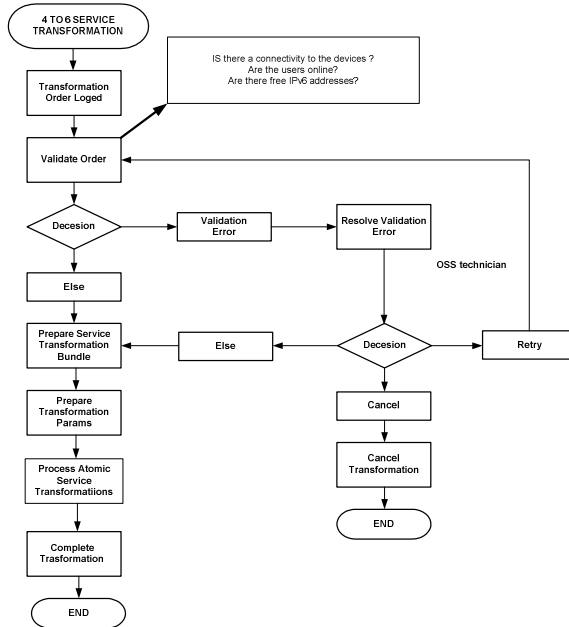

Fig.5. An Example for Service Transformation Process/Algorithm

The algorithm consists of a single workflow, several tasks and decision operators. Let's consider as an example that this workflow is transforming a business IPv4 MPLS L3 VPN service to IPv6 such. In this case the task breakdown will be:
1. Start – Formal start task.
2. Log Transformation Order
   2.1. Input (Customer Name, Customer Locations, Virtual Routing and Forwarding (VRF) Instance name)

    2.2. Transformation time frame (e.g the customer has agreed with the operator his service to be transferred to the new protocol in certain time frame). For example during the weekend when customer office locations are empty.

3. Validation
    3.1. Customer exists.
    3.2. Billing verification - Customer has paid his service for the last 3 months.
    3.3. Data up to date - Customer data into the Inventory is up to date (if not a new upload of the customer devices have to be triggered).
    3.4. IPv6 Support - Customer equipment supports IPv6

4. Resolve Validation Error
    4.1. For example customer equipment in certain location does not support IPv6
    4.2. An email notification will be triggered to the NOC technician.
    4.3. NOC technician might realize that customer equipment software version does not support IPv6 and might trigger a manual software upgrade.
    4.4. Once the update is done the device will be uploaded again into the Inventory and the system might proceed to the next task.
    4.5. If the upgrade is unsuccessful the Technician might cancel the transformation.

5. Prepare Service Transformation Bundle
    5.1. Since some of the customers might have more then one VRF on this step the system shall decide based on the input parameters which VRF shall be transformed.

6. Prepare Transformation Parameters
    6.1. Once the bundle is determined the algorithm shall prepare the transformation detailed parameters for each VRF that shall be transformed. Such As:
- IPv6 VRF naming conventions
- IPv6 VRF Route Distinguisher
- IPv6 VRF Route Target
- Physical ports on which the IPv6 VRF shall be applied
- Logical ports on which the IPv6 VRF shall be applied
- IPv6 addressing for each site for each interface in that site associated with that VRF
- IPv4 policies associated with the particular VRF that shall be transformed to IPv6 policies
- IPv6 to IPv4 Transition needed (Yes or No) If yes determine the transition method (tunneling, dual stack, NAT)

7. Process Service Transformation
8. On that step the platform shall process the real calls configuring the network devices with the parameters specified above.
9. Process Service Transformation
10. Once the calls finish the system will complete the transformation and will update the network inventory database.

    Only the senior ISP designers and OSS consultants have to be able design service transformation algorithms. The workflows most commonly will be executed by the NOC technicians through a simplified GUI interface. NOC operators shall have a GUI interface able to give them information about the start and finish times and dates,

about the % of completeness and the relationship between the different tasks of the workflow. If we make a relationship with the Project Management we will find that such information is present in the common gantt charts. So the GUI interface will look like a GANTT chart.

5 Software Implementation

Currently the project is still in its specification stage. The project members responsible for that stage are Network Architects and are trying to specify the framework architecture features staying away from the software implementation part of the process. Once the specification is finalized the project will be transferred to the Software solution architects team.

However it is clear that the most appropriate software architecture for such solution is the Service Oriented Architecture. The Business Transformation Logic fits naturally to the SOA principles. The inventory and the service transformation might also be easily integrated as a web services next to the BTL. The tricky part of the software tools and technologies selection process is the exact software selection criteria [13] [14]. The software that will be used for the solution creation shall comply with the following criteria:

- Viability - Is the product widely used, and does it enjoy a strong user community? Is the solution well documented? Are sufficient development resources committed to the project?
- Architecture - Is the architecture of the product complementary to the other products we are evaluating? Is it well documented and logical, and does it adhere to common best practices and patterns?
- Monitoring and Management - Does the product provide off-the-shelf monitoring and management tools?
- Extensibility - Can the off-the-shelf solution be extended to add new functionality? Does a pluggable framework exist for adding new functionality?
- License - This is a sensitive topic, but we want to consider mostly products that are licensed using one of the common open source licenses: GPL, LGPL, BSD, Apache, or Mozilla Public License. We want to avoid, if possible, "free" or "community" versions that retain restrictions in usage or modification.

6 Conclusion

In this paper are presented the ideas behind the IP 4 to 6 transformation project. It aims to deliver a framework for IPv4 to IPv6 migration and to fulfill scientific gaps in the current OSS solutions. The framework will be released as an Open Source Product and consists of several major components: Business Transform Logic (BTL), Network Inventory and Service Transformation. Each of these components extends

the state of the art products in its business field and delivers a scientific and practical value beyond current state of the art.

The project is in its specification phase. Despite the efforts of the project authors it may fail due to its complexity, the lack of resources and also due to the fact that the migration towards the new protocol might never happen. The project authors are trying to mitigate these reasons through:

Complexity - The best way to fight with it is to prepare a proper specification that might be easily followed by the rest of the project members.

The project has no financial sponsors and the project team members are participating in it in as volunteers in their spare time. From one side this is a problem but from the other it is advantage due to the fact that the project community are participating a number of professionals with different sets of knowledge instead of a fix number of employees. New Bulgarian University provides the base and the IT resources needed by the 4TO6TRANS team the project initial start.

Migration to IPv6 might be delayed or might never happen. Nevertheless the project aims to deliver an open source Fulfillment OSS solution that will bring benefits also to the existing IPv4 networks. It might be used not only for transforming IPv4 to IPv6 based services but also for transforming a current services and networks to something newer and better related with the future internet.

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Towards Run-time Monitoring of Business-Level Agreements for Web services

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Abstract. Organizations utilize Web services to expose software interfaces for their internal business processes. Often, a Service-Level Agreement (SLA) is established between the organization that provides a service and the organization that consumes it. Although this can help maintain the quality of the service provisioning, it cannot guarantee the quality of the business process being exposed. It is therefore necessary to extend the concept of SLA to include the definition of concrete work-flows and quality characteristics at the business level. This paper attempts to establish the concept of a Business-Level Agreement (BLA). It discusses research ideas for monitoring Web services for violations of BLAs during run-time. Also, it reviews work related to the run-time monitoring of behaviour and quality of Web services, while also discussing the requirements of such a monitoring framework. The paper also presents thoughts on utilizing run-time verification through Stream X-Machines for the monitoring framework.

Key words: run-time monitoring, Business-Level Agreement, Web services, Stream X-Machines

1 Introduction

Web services are utilized as interfaces for accessing business processes of a Business Service Provider (BSP), without exposing how these processes are implemented. This abstraction introduces some unique opportunities related to the

integration of heterogeneous software systems, while at the same time raises significant business concerns such as trustworthiness, adaptability, and quality of service, since a Business Service Consumer (BSC) using such processes depends on their concrete implementation for achieving his business goals. Hence, the BSC wishes to have guarantees for the operation of the services being consumed and continuously monitor for violations of these guarantees, in order to be able to react in a timely fashion.

Guarantees that are mainly concerned with the provisioning of the Web services fall in the scope of a Service-Level Agreement (SLA). SLA acts as an agreement between BSP and BSC upon quality characteristics such as the response times and the data rate of the provided services. Although SLA is sufficient for the provisioning guarantees, it is not enough on its own since it does not contain guarantees that are concerned with business level.

The ability of Web services to be dynamically discovered, composed or replaced at run-time, combined with a lack of knowledge about their concrete implementation, constitutes a large threat to the business goals of the BSC. Moreover, it is also critical for the BSP to detect deviations from the agreed behaviour, in order to perform corrective actions before the deviations affect the BSC.

Based on the aforementioned motivation, we believe that it is necessary to introduce an agreement, which contains guarantees for a Web service at the business scope. These guarantees concern the way that the behaviour of a particular business process is being implemented and the quality of its implementation. In addition, since in Service-oriented systems services are being replaced or deployed at run-time, it is necessary to monitor the guarantees of such an agreement to ensure compliance.

The rest of the paper is structured as follows. In section 2 we present a sample of the existing literature on monitoring the behaviour and the quality of Web services, while also discussing the existing gap for monitoring business agreements for Web services. Section 3 describes the concept of the Business-Level Agreement and the need to monitor the compliance of Web services to the agreement. Finally, section 4 presents our thoughts for implementing an architecture for monitoring Web services for deviations from the agreement, and in the conclusions we summarize the main points of our work and provide an outlook for future research.

2 Related Work on Monitoring of Web Services

The aim of this section is to briefly discuss a sample of the related work on monitoring Web services at run-time. In the following subsections, the literature has been classified into two categories: (i) work that concerns the monitoring of behavioural properties, (ii) and work that focuses on the qualitative properties. After the discussion of both, we state the gap that this research attempts to address.

2.1 Behavioural Monitoring

Baresi et al [1] describes a methodology for run-time monitoring of composed Web services in BPEL using contracts, which are expressed as assertions and constrains. These are specified within the BPEL file as XML structured comments. Then, the BPEL file is provided as an input to a preprocessor that parses the comments, in order to generate new Web services which act as monitors, Additionally, the BPEL file is altered to include invocations of the monitoring services.

Lazovik et al [2] also use assertions for monitoring the execution of business processes. However, they do not embed the assertions in the process file and they use a separate document for specifying the assertions. They propose a representation named XML Service Assertion Language (XSAL). The authors have also introduced a language for formulating requests based on assertions named XML Service Request Language (XSRL). Documents specified in the aforementioned languages are passed to a planner that creates feasible plans, which satisfy the specified assertions. Finally, the monitor is updated with a series of plans that potentially satisfy a request.

Mahbub and Spanoudakis [3] propose a framework for requirements monitoring of service compositions created in BPEL4WS. The authors use Event Calculus [4] for expressing behavioural properties and assumptions for the composition, as events that will occur within timed constrains. A requirements editor is used to specify the properties to be monitored. Also, it is able to extract properties from a BPEL4WS composition to Event Calculus.

Li et al [5] describe a framework for monitoring the run-time interaction behaviour of Web services and validating their behaviour against pre-defined interaction constraints. The framework uses finite state automata (FSA) as foundation for checking the interaction constraints. Moreover, the authors employ operators from the Specification Pattern System (SPS) [6–8] for specifying the interaction constraints.

Gan et al [9] and Simmonds et al [10] use an approach to run-time monitoring of conversations between service partners by checking the behavioural correctness of the participating services. The authors employ a subset of UML 2.0 Sequence Diagrams (SD) as a method for specifying safety and liveness properties. The authors convert the SD to finite state automata to enable conformance checking against the specification. Finally, they present how it is possible to represent patterns specified by the Specification Pattern System (SPS).

Kallel et al [11] introduce a novel formal language named XTUS-Automata for specifying relative time and absolute time properties for Web service compositions. The authors have combined the Timed Automata and the Extended Time Unit System to create the aforementioned language. They use this language to monitor temporal properties of service compositions by automatically translating the formal specification to monitoring code in AO4BPEL, an aspect-oriented framework for BPEL. Timed Automata have been also used by Raimondi et al [12] to monitor conditions of service level agreements, which are mainly concerned with latency, reliability and throughput requirements.

2.2 Quality Monitoring

The work presented so far focuses on specifying and monitoring behavioural properties of services. Most of the works utilize various formal methods as foundation for modeling and checking the behavioural properties. The work presented below focuses on monitoring qualitative properties of Web services.

Keller and Ludwig [13] introduce a novel framework for specifying and monitoring SLA for Web services. The authors claim that the framework enables service customers and providers to unambiguously define a wide variety of SLAs. Web services can then be monitored for violations of the SLA. An implementation of this framework is available as part of the IBM Web Services Toolkit.

Barbon et al [14, 15] propose a framework for the execution and monitoring of composed Web services. The authors have enhanced a BPEL execution engine named Active BPEL to detect violations of interaction protocols and service level agreements. They use State Transition Systems (STS) as foundation for implementing monitors that are able to observe only the messages exchanged among processes. Also, they use Linear Temporal Logic for specifying assumptions and goals as propositions, which are then checked at run-time for their validity. In later work, they propose the monitoring of properties for single instances of Web services and monitoring of statistical properties for all instances of a Web service (class). Additionally, they introduced a run-time monitor specification language (RTML) based on which monitors can be automatically generated as Java programs.

Ameller and Franch [16] describe an architecture for monitoring violations of service level agreements called SALmon. The monitor implements the measurement of quality attributes taken from an ISO/IEC 9126-1-based service oriented quality model. Analysers check the measurements using SLA rules, while decision makers may perform corrective actions to satisfy SLA rules again, if a violation has occurred. The authors focus more on proposing a taxonomy of quality characteristics that should be monitored. Moreover, there is no evidence that the authors use a formal methodology.

Kotsokalis et al [17] propose a methodology for modeling SLAs as Binary Decision Diagrams. The method is able to model facts (BusinessHours = 09:00-17:00), conditions (TimeOfDay in BusinessHours) and clauses (Service1 availability > 95%).

2.3 Beyond the State-of-the-Art

Since 2003, monitoring of Web services at run-time to assure correctness and quality has received a lot of attention. Existing approaches to the problem of run-time monitoring differ in a number of characteristics, including (i) the specification language for representing monitoring requirements, (ii) the monitoring mechanisms for inferring errors during the execution of the Web services, (iii) the intrusiveness of the monitoring methodology to the monitored system, (iv) the aspects being monitored, and (v) the methodology of reporting the results of monitoring.

The authors in [18] support that there exists a wide range of methodologies for monitoring Web services which differ in the representation and the semantics. However, most of them manage to solve a small fragment of the problem and it is therefore necessary to combine these existing approaches, in order to tackle more complex and interesting challenges concerned with Web services monitoring.

Such a challenge is the monitoring of Web services at the business-level, which is critical for an organization that wishes to preserve correct implementation and concrete quality levels of its business processes. This implies the need for representation of the business entities and concepts in a machine readable manner. Together with the representation, there is need for monitoring techniques that will be applied on this representation to infer useful information. In addition, this information could be used for alerting the organization or using this information as input to adaptation techniques for Web services. This is the gap that this research aims to address.

3   Business-Level agreement

The Service-oriented Architecture (SOA) enables the partial or complete outsourcing of business processes to different Business Service Providers (BSP). However, the implementation of a business process typically differ from one BSP to the next. Thus, it is important for the Business Service Consumer (BSC) and the BSP to establish an agreement that contains clauses about the implementation of the business process. However, when comes to the creation of such an agreement, two questions emerge: (i) what should it include and (ii) how abstract should it be. We present an example in the following paragraphs to attempt formulating answers for the aforementioned considerations.

eMusik is an e-commerce organization (also the BSC in this example) that sells digital goods, such as music discs, which are available for direct download from customers who purchased them. eMusik uses the Amazon Flexible Payments Services (Amazon FPS) [19] for managing financial transactions (the BSP in this example). eMusik has signed an agreement that contains two clauses: (i) when a customer purchases a music disc and eMusik creates a new order in Amazon FPS, money should not be transferred from a customer's account to eMusik until the Amazon FPS is informed by eMusik that the customer has downloaded the music disc, and (ii) the money transfer from the customer's account to eMusik should be completed within an hour.

Regarding the first clause, it is evident that this expresses dependences among the occurrence of events, actions or tasks. That is, it describes when to transfer the money from the customer's account. eMusik could be more demanding for its payment procedures and explicit agree with Amazon the steps that should be followed for handling a payment. However, this would have to describe how the process should be implemented. We link both how and when to the behaviour of the business process for handling payments. The second clause includes a time limitation of one hour in which the money transfer from a customer's account to eMusik should be completed. The implementation of this constraint varies,

because a payment may take less or more than an hour to complete, latter is a violation of the agreement. We link this clause to the quality of the business process for handling payments.

Based on the aforementioned example, we believe that the contents of such an agreement should contain clauses that describe behavioural and qualitative aspects of a business process. The behavioural aspect should describe the steps, rules and dependencies that comprise the work-flow of a business process, while the qualitative aspect should describe the quality attributes of the work-flow. Also, for the level of detail that such an agreement should include, we believe that it should be detailed enough to capture the important features of the behaviour and quality of a business process, without being an exact copy of the implementation of the business process. Therefore, the agreement may describe behaviour with abstract steps or states of the process and the quality as propositions. However, the actual representation of the agreement is future work still.

The term we selected for naming such an agreement is Business-Level Agreement (BLA). We believe this term is ideal, since it is similar to a Service-Level Agreement, however in its scope lies the business concerns of the partners who sign it. Additionally, another inspiration for the term is [20] according to whom, the term Business-Level Agreement (BLA) describes an agreement between two business partners who will be participating in business processes using Web services. Hence, we believe that the term BLA is ideal for naming the agreement that could be established between a BSP and a BSC for capturing the agreed implementation of a business process.

3.1 Monitoring the Agreement

In the previous section we presented the concept of the Business-Level Agreement (BLA). BLA is the representation of the behaviour and the quality of a business process agreed by two or more business partners. Although a Business Service Consumer (BSC) and a Business Service Provider (BSP) could test a service to ensure the conformance to the BLA, such solution is not viable in the SOA environment for a number of reasons that are presented in this section.

In SOA services are distributed, deployed on heterogeneous platforms, and may become unavailable without prior notification. Services are not always owned by a single party and therefore there is no knowledge of the internal structure and the behaviour of the services. Also, even if a service meets its specification prior to deployment, it might deviate from its specification during run-time. This can occur because the BSP, unwittingly or intentionally, may modify the service implementation at a later point without reflecting this change in the specification of the service. Hence, a service that originally was correct could became incorrect during its evolution.

The aforementioned issues have a direct impact on a BLA established between the stakeholders of a Service-oriented system. The functionality of a service can become affected in a way that prevents it from complying with its original specification, this implies that the behavioural and qualitative aspects

of the service are also affected. The problem becomes more complex if a service is composite and depends on other services, which become unavailable, get replaced, or have their behaviour modified. It is therefore necessary to continuously monitor a Web service for compliance to the BLA at run-time, in order to indicate deviations from the agreed behaviour and quality of the provided service.

The indication of the deviations from the BLA during the execution of the service could assist the stakeholders in taking action against the deviations. Additionally, it could provide a proof for the BSC to claim a compensation from the BSP, if the BSP fails continuously in honouring the BLA. Other benefits of performing monitoring for violations of the BLA is the use of the indications as input to business adaptation mechanisms, which could adjust business parameters of the service in order to recover from effects of a violation. Also, the same indications could be used for replacing one BSP by another who respects the BLA automatically.

4   Thoughts for the Monitoring Architecture

Although our work has been focusing on the theoretical aspects of monitoring the conformity of Web services to Business-Level Agreements (BLA), we are now starting to deal with the practical aspect of the problem. In the following paragraphs we illustrate few thoughts for the monitoring architecture and the methodology for accomplishing the monitoring task.

Since the monitoring happens during run-time, it requires a separate component to operate in parallel with the monitored Web service and provide feedback for the execution of this Web service. A consideration for our architecture is that the operation of the monitor should not have any impact on the execution of the Web service being monitored; a fault of the monitor should not imply a fault of the Web service. Also, Web services are a great method for reusing and exposing functionality, thus the monitor could be a Web service itself.

In a previous work [21] we have proposed the utilisation of Stream X-Machines [22] for constructing formal behavioural specifications of Web services, which can be exploited for verifying that the behaviour of a Web service does not deviate from the behaviour expressed in its specification. Stream X-machines (SXMs) are a computational model capable of representing both the data and the control of a system. The key idea of this work is to represent a SXM as a XML document, which is then used to animate the SXM model at run-time using the actual user input to the Web service, in order to verify the behaviour of the Web service. For the animation of SXM, we use a tool named Java SXM (JSXM) developed in Java [23].

We aim to utilize the aforementioned approach for dealing with the behavioural aspect of BLA. For the qualitative concerns, we have not yet concluded on the approach to employ. Also, although JSXM supports interactive and batch animation, and therefore providing a starting point for experimentation, it requires more implementation in order to be useful in our monitoring architecture.

This is an issue, since JSXM was developed initially as a standalone application. Moreover, concerning the reporting of the results produced by the monitor, we are going to use the simple output log from JSXM. However, it is recognized that monitoring results need to be translated into a human readable representation, while also this representation of the results should utilize the business context of the BLA.

5 Conclusions and Future Work

Service-oriented systems have an open architecture, which enables the use of third-party services. For avoiding business errors during the utilization of third-party services, the stakeholders should agree on the behaviour and the quality of the used services at the business-level. The commitment of the stakeholders to the Business-Level Agreement cannot be guaranteed with only testing the implementation of a service prior deployment, thus raising the need for continuous monitoring of the behavioural and qualitative aspects of the used services during run-time.

In this paper we have presented a sample of the existing literature for monitoring behavioural and qualitative aspects of Web services. Moreover, we have discussed the existing gap concerning the need for an agreement on the behaviour and the quality of an implementation of a service or a business process. We have proposed how this gap can be fulfilled with the introduction of a Business-Level Agreement (BLA). Furthermore, we have justified the need for monitoring the BLA at run-time to detect deviations and ensure the commitment of the stakeholders. Finally, we have discussed our thoughts for implementing a monitoring architecture for achieving the aforementioned task.

As future work we will focus on devising a machine readable representation of the BLA, in order to be utilized for the monitoring task. In addition, we will be seeking for an approach to represent and monitor the qualitative concerns of the BLA. Finally, we intend to complete the implementation of the Java Stream X-Machine animator tool, in order to be utilized in the monitoring architecture.

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An Approach to Domestic Utilities Monitoring Based on Service Delivery Framework

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Abstract. The challenges in keeping any kind of energy consumption in reasonable limits are not getting any smaller. Usage of water, electrical energy or gas by people is becoming a hot issue because of the natural resources limitations and utilities companies often must re-engineer in order to optimize their operations in this regard. In the same time, the people request higher levels of services and they want a simple way to keep as low as possible their consumption of utility services. This paper describes a method of monitoring utilities based on a framework from telecommunication platforms, called Service Delivery Framework, a model that allows high flexibility in terms of service deployment and integration. The integration capabilities are based on the pluggable resource adaptors concept that offers the possibility to connect with different kind of devices including modern meters that support various types of protocols. In this paper, a description of the framework is done, followed by the concept of a service that can ensure utilities monitoring for domestic customers, giving them the possibility to configure the service using mobile phones. In the end of the paper, advantages of developing such services are presented based on the described telecommunication framework.

Keywords: Middleware, Brokers, Interoperability, SOA, Framework

1 Introduction

The Smart Metering represents a paradigm shift in utility distribution for domestic customers. Instead of mechanical meters where the reading is done typically once a month, smart meters are capable of measuring on a more frequent basis (up to minutes). The Frequent Metering can become a "closer to real-time" feed-back so that both utility providers and consumers may adapt to a consumption model more appropriate to existing resources. As a typical example, a customer changes his / her behavior according to fine grained consumption tariffs, heightening consumption in a lower rate periods. Additionally, the consumer gets an invoice according to his / her real consumption. Both consumer and provider have more information and may manage monitored characteristics of the overall system in a far better way – towards "green" life style.

The interaction between the consumer and the smart meters can be done manually - in the way that the consumer can check the displays of the meter (which it is not convenient) - or the interaction can be mediated by middleware frameworks. These frameworks can be constituted from the software and/or tools that help on one side to access more easily the values of meters from customer perspective and on the other side, from utilities companies' perspective to charge and bill in a flexible way as the consumer decided to do it based on a chosen billing plan.

This paper presents the possibilities of using the telecommunication platforms for interactions with smart metering, describing one monitoring solution by using the Service Delivery Framework (SDF).

The selected framework is presented in the part 2 with focus on the general architecture of SDF. The concept of the developed service based on SDF is introduced in the section 3. In the last section, conclusions and advantages of using such service based on the telecommunication framework are presented.

2 Service Delivery Framework Description

The need of development and operation support of end-user services in telecommunication area is covered by the new Service Delivery Framework concept. The framework was introduced to facilitate development of services and their fast integration based on Service Oriented Architecture (SOA). In this way, the possibility to include more and more components in a flexible way was created [3].

The SDF concept offers the possibility to design the service logic separately from the service execution environment in such a way that the service developers do not need to have the know-how about the specifications of the targeted system, in this way the developers being able to concentrate on the service logic without bearing in mind any fussy system or platform particularities [3] [4].

In the mobile networks, SDF acts as an application server and it takes the role of a Service Control Point (SCP). SDF uses the Service Switching Point (SSP) to direct interconnection to the core network. Usually SDF contains, as the one used for our service development, basic services like Mobile Originating Call service, Mobile Terminating Call service, SMS Mobile Originating service. Based on these services, additional ones can be developed as it is presented in this paper.

Service execution inside SDF can be built around commercial application servers like Java Enterprise Edition (JEE) and Java Service Logic Execution Environment (JSLEE) also known as Java API for Integrated Networks (JAIN SLEE). The reason is based on the fact that JEE defines a flow-driven container technology at the same time as JSLEE defines an event-driven container technology. Thus, for the implementation of front-end functionalities of the services J2EE can be used.

Fig. 1 represents the SDF service functional hierarchy based on the points highlighted above and based on several concepts from TMForum and vendors like Alcatel-Lucent, Sun or Nokia Siemens Networks [4]. The application layer symbolizes the business case of the customers and represents a customer-specific service workflow. The model and the whole SDF concept is the subject of a

standardization process that it is still ongoing, therefore the architecture may vary from an implantation to another.
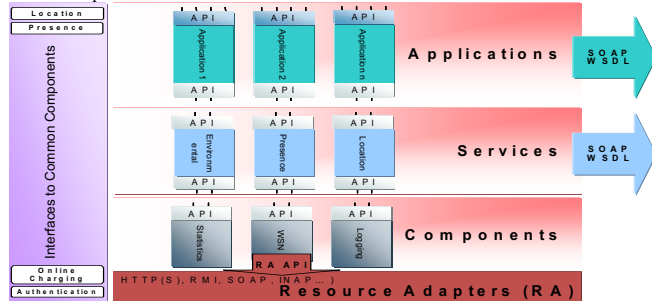

Figure 1 - SDF service functional hierarchy

3   Service Concept Description

The service presented in this paper is based on Service Delivery Platform concept and use Business Process Execution Language (BPEL) process. The process orchestrates several Web services with targets on Administration, Monitoring and SMS (Short Message Service) management like send-receive.

The service represents a Proof of Concept and the development is split in several phases for a better evaluation. For the first phase only restricted use cases were planned and in this paper one use case is presented. The prototype is built as a separated set of components extending and using existing SDF services.

The BPEL process invokes the services mentioned before and it is designed to use activities like assign activity, invoke activity, Java embedded activity, switch activity and partner link [2].

Every BPEL process must implement one fault handler that will terminate the process every time an error occurs. The Monitoring Utility BPEL process handles the remote faults so every time one of the web services used is not reachable the process terminates – but not before executing the task from the remote fault branch.

The general concept of the service (Fig. 2) is based on the fact that the service is triggered by the user which request energy consumption data for a specific time frame. The service continuously collects the metering activity and consolidates the data and it sends back the requested values, using for example SMS based on ParlayX Application Programming Interface [1].

The following sequence defines the usage of the service in case the monitoring results are requested by the user/consumer using SMS:

1.   The user sends a SMS to the service number inserting the date and hour starting from when consumer wants to know the metering results (e.g. "10/04/2010 09:00").
2.   The SMS reaches the receiving SMS-Center.
3.   The SMS-Center is configured to forward the received SMS with service number to the SMS Gateway.
4.   The SMS Gateway receives the SMS and is configured to forward this message to the SDFMonitoringUtility service using Web Services.
5.   The service checks the database to determine that the user is associated with the sent MSISDN, it checks if it is a registered user to the service and afterwards it receives his profile (what kinds of utilities are monitored).
6.   The service extracts the SMS message text that contains the first date and hour that are part of the desired monitoring interval.
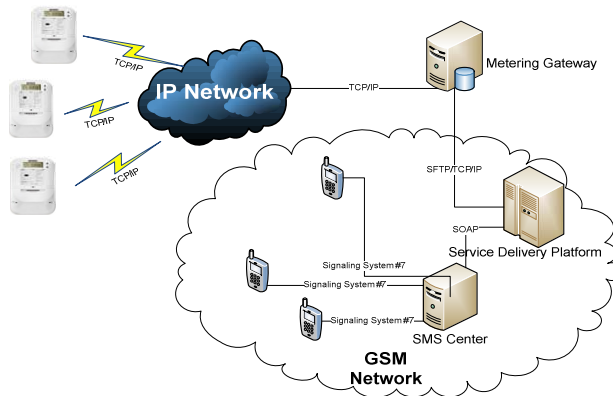

Figure 2 - General Notification Solution Architecture

7.   The service sends the user request to an external Metering Gateway through the Web Service. The specified request date and hour and the current date and hour of the system, it forms the monitored interval. Additionally, from the database, the identifications of the utility smart meters are sent in order for Metering Gateway to be able to contact the consumer meters using File Transfer Protocol service. Such a service is already implemented at the Resource Adapters level in SDF so just invocation of it being necessary. The service will receive the values returned by meters, passing through the Metering Gateway.
8.   The service formulates a new SMS specifying service number as source and user number as destination and the monitoring value, together with the requested time interval. In case there are more utilities monitored, then the SMS will contain all the values on utilities categories.
9.   The service sends the new SMS using the SMS Gateway.

10. The SMS Gateway uses the SMS Center to send the SMS.

Due to the complexity of the service that consist of several Web Services and BPEL processes, the focus will be only on the description of the user notification mechanism.

On the current paper, description of one BPEL process (Fig.3) is done to demonstrate part of the solution flow based on SDF architecture [5]. The BPEL process is build in an asynchronous mode, as it may take some time to process the metering data since in a synchronous process must replay on a certain amount of time. Fig.3 describes the Web Services involved on the BPEL process, but on the flow can be seen also additional Web Services that are available but not invoked by the process.
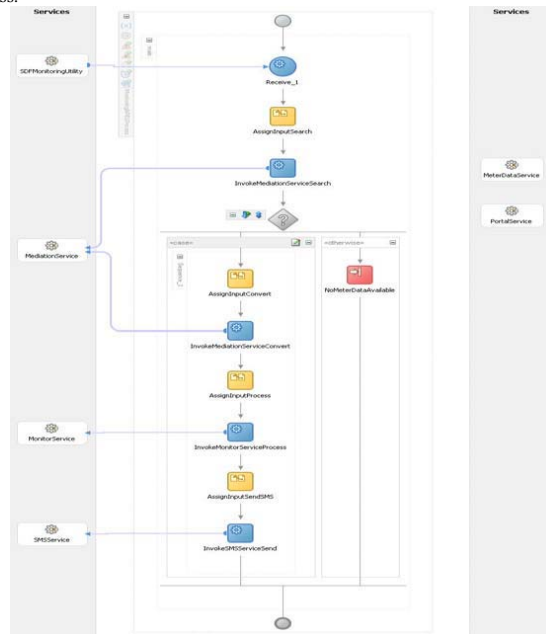

Figure 3 - BPEL Process for Notification Solution

MeterDataService target is used to create a Meter Data file for each meter read. As these files must get in an accessible place for the other services that will need them, the files are copied to a FTP server file directory. The current service must be located on the meter device side.

MonitorService is responsible for processing the events and retrieving the necessary information for a user. The user may see the data on a web portal or to subscribe to receive an SMS.

A user can choose to see his consumptions on a portal that offers a web interface based on PortalService. Behind the interface, this service is responsible for triggering the information that must be displayed to the user on his request. The web interface is independent from the service and can be customized as it is desired.

As an alternative to the previous service, the user may register to receive an SMS with all the information based on SMSService that is integrated with Service Delivery Platform. The current service is developed to send SMS Mobile Termination with the metering results data.

The SMSService uses the ParlayX 2.0 Short Messaging Web service interface [1] for SMS handling. ParlayX is a standard concept which defines web services APIs to use capabilities of the fix or mobile telephone network.

The following table shows the structure of the SmsMessage object. This object is an instance of a class that has this name and is automatically generated from the WSDL files of the ParlayX.

Table 1: Format of the ParlayX SmsMessage Object

Element name	Element type	Description
Message	xsd:string	Text received in SMS
SenderAddress	xsd:anyURI	It indicates address sending SMS
SmsServiceActivationNumber	xsd:anyURI	The destination address used to send the message

The addresses must conform to the address portion of the URI definition provided in RFC 2806[3] for example "tel:". Optional additions to the address portion of these URI definitions must not be considered part of the address accepted by ParlayX Web Services interfaces.

The SDFMonitoringUtility has as an input the interface that initiates the method. This method is invoked when a client wants to initiate the BPEL process. In the WSDL file of the service this method is described as follows:

```
<portType name="SDFMonitoringUtility">
  <operation name="initiate">
    <input message="client:
            SDFMonitoringUtilityServiceRequestMessage"/>
  </operation>
</portType>
```

The SDFMonitoringUtilityServiceRequestMessage has the following format:

```
<element
name="SDFMonitoringUtilityServiceRequestMessage">
  <complexType>
    <sequence>
```

```
        <element name="RegistrationIdentifier"
        type="string"/>
        <element name="message"
        type="parlayx_sms_xsd:SmsMessage" />
    </sequence>
  </complexType>
</element>
```

The SmsMessage is defined using the ParlayX standards. The service output is ParlayX sendSMS interface. The interface is described in the WSDL (Web Services Description Language) file and the most important parts of this file are listed and described below.
The method invoked is SendSMS and has as an input the sendSMSRequest message:

```
<wsdl:portType name=" SendSms">
  <wsdl:operation name="sendSms">
    <wsdl:input message="impl:sendSmsRequest"
          name="sendSmsRequest"/>
  </wsdl:operation></wsdl:portType>

<wsdl:message name="sendSmsRequest">
  <wsdl:part element="tns1:sendSms" name="parameters"/>
</wsdl:message>
```

The message has a complex type element within its definition:

```
<element name="sendSms">
  <complexType> <sequence>
      <element maxOccurs="unbounded" name="addresses"
            type="xsd:anyURI"/>
      <element name="senderName" type="xsd:string"/>
      <element name="charging"
              type="tns2:ChargingInformation"/>
      <element name="message" type="xsd:string"/>
    </sequence>
  </complexType>
</element>
```

This complex type defines the exact number of attributes expected for SendSMS method and their types. ChargingInformation is a special element type defined in the ParlayX standards [1] and represents the charge method to apply to this message.

As an implementation for handling the SMS, there are two web services which were generated from the WSDL files. Basically each web service has an endpoint. This endpoint will be used when the specific web service will be invoked.

The architecture used for the implementation is top-down, generating Java classes from WSDL files. The main function of the SendSms web service is to send the message forward to the SmsEngine. This is done by using the JAX-RPC/ JAX-WS 2.0) (Java API for XML-based Remote Procedure Call / Java API for XML Web

Services) method which consists of an invoked specific method and its parameters that use remote procedure call technology.

4 Conclusions

In this paper, the utilities monitored concept is associated with the new telecommunication framework called Service Delivery Framework in an innovative way. The main advantages of such a framework usage are related to the scalability and redundancy of such a solution together with the high availability which is one of the most important characteristic of the telecommunication frameworks. Even more, the usage of such a telecommunication middleware layer brings the opportunity to use, by customizing, the already implemented processing data for billing purpose as well as the billing models [6].

Because of the solution complexity, only utilities monitored notification based on SDF were presented throughout this paper without the description of the communication layer with the metering devices. This is because the communication with the smart metering is usually done using protocols like FTP (as it is in our case). Variants in the protocols, modes of operation, data syntax, semantics and other aspects have to be taken into consideration for future development. The effective connectivity of the smart meters is out of the paper scope since there are different commercial devices that use connectivity like GPRS (General Packet Radio Service) or wireless LAN.

For future implementation and research, the main direction is the appliance of charged policies together with the billed policies for utilities consumptions based on SDF. By using this approach, the end user of the solution – the consumer – can use flexible tariffs because the utilities provider has the possibility easily to configure special offers and customized billing. During our prototype development, the service performance was not treated and because it is a mandatory requirement for such a service, specific mechanisms will be implemented in our future research.

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A Formal Approach to Service Composition using Stream X-machines

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Abstract. Service composition is one of the key benefits of service-oriented architectures (SOAs). It promotes reusability and enables the satisfaction of new business needs while these emerge, with the use of existing services. Web Services (WSs), as the prevailing architecture for realizing SOAs, support service composition through standards for orchestrations and choreographies. Being able to validate and verify that a service composition behaves as intended and as expected is of utmost importance. This is signified even more in cases where a composition employs multiple services from different providers where the composer has little or no control over them. Formal methods can greatly assist in this task by providing modelling, testing, validation and verification techniques which are based on mathematical models. In this paper we consider Stream X-Machine (SXM) as an alternative way of formally modelling Web service compositions. SXMs can offer some important benefits in this field due to their associated testing strategy [1] and model checking capabilities [2]. Finally, a first attempt on translating BPEL orchestrations to abstract SXM models is presented as a set of mappings between BPEL and SXM elements.

Key words: Web service composition, formal methods, BPEL, Stream X-Machines

1   Introduction

It is claimed that the true SOA benefits will be enjoyed only once automatic service composition is realised [3]. However there are some serious challenges that have to be faced before composition can be truly automated. A set of these challenges relates directly to semantics and planning such as how a service can be composed dynamically based on consumers' requirements, how the consumers can unambiguously state their needs, and the like. Another important challenge that has to be faced is the establishment of trust among consumers and providers; regarding functional as well as non-functional requirements.

In every composition there is an inherent notion of trust. The composer has to trust the providers in that the services employed for the composition will behave as advertised. When utilising services solely from their own organization the concept of trust may not be as relevant as in cases which involve services offered by other organizations. It may often be the case that the organization conducting a composition has not established a real world relationship with the various providers and despite that it should trust their services.

Finally, the fact that multiple services have to be coordinated in order to perform a specific task raises concerns on its own. As with traditional software engineering, unit testing is not sufficient when different components communicate and interact with each other. This is usually dealt with some form of integration testing and similarly a composition should be tested on its own to validate both its design and its implementation against its specification. Not surprisingly, consumers of a composition have to trust the composer in that the composition itself was correctly defined and implemented.

Formal methods can significantly assist in testing, validating and verifying service compositions, laying the foundations for trust. During the last years there has been a growing interest of the research community into applications of formal methods in the domain of service compositions. In this paper we present SXMs as an alternative way of modelling service compositions. SXMs feature a testing strategy which under certain conditions is proven to uncover all implementation faults [1] and a model checker which allows for the verification of certain properties in a given SXM model [2]. Furthermore, a first attempt on translating the BPEL orchestration language to SXMs is made by defining element mappings between the two.

The paper is structured as follows. Section 2 reviews the latest achievements of formal methods in the domain of service compositions and the next section presents SXMs as an alternative way of modelling those. Finally, section 4 presents a set of rules for translating BPEL processes to abstract SXM models and section 5 concludes with a discussion and some ideas for future work.

2   Formal Approaches on Service Composition

In the context of WSs, formal methods can provide the means for verifying and validating the functional requirements of a service. The first step is to model the desired service with a formal methodology in an accurate way. Afterwards it is possible to apply techniques and tools already available for this formal approach in the modelled service.

Recently, a variety of proposals to formally describe, compose, and verify WSs have emerged. The majority of these are based on state-action models (e.g. labeled transition systems, timed automata, and Petri nets) or process models (e.g. π-calculus and other calculi). The usual procedure is to accept the (composite) WS in a predefined specification language and represent it to a formal notation in order to be able to verify the desired properties. The internals of these techniques vary among different works with respect to (a) the specification language accepted as an input (e.g. WS-BPEL, PEWS, WSDL, WS-CDL), (b) the underlying formal model employed for transformation (e.g. Petri-nets , interface grammars, dependence graphs, process algebras etc.) and (c) the degree of automation of this transformation (i.e. manually, automatically or in between).

There are many approaches and tools (e.g. BPEL2PN) for transforming a business process specified in WS-BPEL to a formal model. In many cases the formal model is in one of the several versions of finite state machines and automata [4–7]. Process algebras have also been used for formally modelling BPEL processes [8]; both existing (e.g. the Calculus of Communicating Systems [9], π-calculus, and LOTOS [10]) and new process algebras devised solely for this purpose (e.g. Finite State Process (FSP) [11] and BPE-calculus).Another formal approach used widely for modelling and verifying business processes is Petri nets [12, 13] and its many subtypes [14–17] as well as Abstract State Machines [16].

The next step is to represent the formal model of a service or composition in the appropriate format in order to be inputted to a model checker (e.g. Promela for SPIN) [18–20] or any other verification tool developed for this formal model. Afterwards, the output of such tools can be used as input to the specific model checker for the model (e.g. Petri nets - Low Level Analyzer and Wolfan, State machines - SPIN, SMV and NuSMV [21]) to verify standard properties of the formal model (e.g. in Petri nets determining if a Petri net contains a deadlock, termination of a workflow net, detection of unreachable activities or detection of multiple simultaneously enabled activities and determination [15]), any property expressed in the logic supported by the model checker (e.g. LTL, CTL), or both [22–24].

Another advantage of modelling services and processes with formal models is the capability for further analysis and simulation [25, 26]. This can enhance the developers' understanding of the expected system as well as provide some confidence for its behaviour during the early stages, constituting thus an informal verification [27, 28]. For example, WS-ENGINEER provides among others visual simulation of orchestrations based on Labeled Transition Analyser (LTSA) [29].

Our initial work has demonstrated the advantages and the applicability of modelling BPEL processes with SXMs [27]. Subsequent, independent work by Chunyan Ma et al. [30] made an attempt to provide the theoretical base for transforming BPEL processes into SXMs in order to utilise their associated testing strategy. However, it did not provide the means for translating a BPEL process to a concrete SXM representation, such as XMDL or JSXM, but rather presented some modelling guidelines that can assist during such transformations. In fact the focus of this work is on automating the generation of sequence tests and not the translation of a BPEL process to an SXM model per se. As existing work is far ahead of automating this process, this paper aims to move a step further towards this direction. In the next section, SXMs are discussed as an alternative way of modelling service compositions.

3   SXMs as an Alternative Modelling of Service Compositions

SXMs is a formal method that enhances the class of Finite State Machines by introducing memory and functions. An SXM is defined by an input stream, an output stream, a set of values that describe its memory structure, a set of states, a state transition set and a set of functions. Labels in the transitions are functions which are triggered through an input symbol and a memory instance to produce an output symbol and a new mem-

ory instance. A deterministic SXM [1] is an 8-tuple $X = (\Sigma, \Gamma, Q, M, \Phi, F, q_0, m_0)$ where:

- Σ and Γ are the input and output alphabets respectively.
- Q is the finite set of states.
- M is the (possibly) infinite set called memory.
- Φ, the *type* of the machine X, is a set of partial functions φ that map an input and a memory state to an output and a possibly different memory state, $\varphi : \Sigma \times M \to \Gamma \times M$.
- F is the next state partial function, $F : Q \times \Phi \to Q$, which given a state and a function from the type Φ determines the next state. F is often described as a state transition diagram.
- q_0 and m_0 are the initial state and initial memory respectively.

SXMs can be employed in similar cases with Statecharts and other similar notations such as SDL. However, SXMs have several significant advantages over them. Firstly they provide a mathematical modelling formalism for the system which in turn allows an SXM specification to be model checked [2], facilitating thus the verification of desired model properties. Moreover, SXMs offer a strategy to test the implementation against the model which guarantees to determine correctness if certain assumptions in the implementation hold [1].

SXMs have been used extensively to model WSs allowing for formal verification through automated testing [31, 32], registry-based conformance testing and verification [33, 34] and runtime monitoring [35], demonstrating the applicability of the model in the specific domain. Initial work on modelling BPEL orchestration with SXMs has also been conducted [27] where a case study has been modelled completely with SXMs but in a manual manner rather than an automated translation.

In this paper we set the foundation for an automated translation of BPEL processes to SXMs. Such a translation would enable the application of the tools, theories, and strategies mentioned above to BPEL processes. The next section briefly presents BPEL and describes the translation architecture and rules.

4   BPEL Translation To SXMs

The Business Process Execution Language for Web Services (WS-BPEL or BPEL) was first conceived in 2002 by IBM, BEA, and Microsoft as an XML language which merged key features of IBM's Web Services Flow Language (WSFL) and Microsoft's XLANG specification. In May of 2003, version 1.1 [36] of BPEL was published and at this point it started to gain significant popularity. During this period the specification has been also submitted to an OASIS technical committee so that it could become an open standard. In April 2007, the WS-BPEL 2.0 [37] was approved as an OASIS standard while in 2008 an extension named BPEL4People which enables the modelling of human interactions with composite services has been submitted for standardization.

BPEL is currently the most widely used language for defining WS orchestrations. A distinction is made between abstract and executable processes whereas the former are not executable while the latter are. An abstract process may facilitate the understanding

of a process among stakeholders during the early stages of development where there is no complete picture yet. Executable processes are invokable by consumers and thus can perform further invocations as well as return results. Apparently, there is a greater benefit in formally modelling a BPEL executable process rather than an abstract one, as the former is going to be deployed in a real world environment and thus the potential risks are greater.

Fig. 1. The translation architecture of BPEL processes to abstract and concrete SXM models.

The translation architecture is depicted in figure 1. The translation rules are applied on the WS-BPEL 2.0 document in order to provide an abstract SXM model in XMDL. This model includes the possible states and the transitions among them. The data are modelled as well, in the memory of the SXM, their representation at this level is rather abstract. While from a modelling perspective this is desirable as it maintains a lower level of complexity, during testing a more concrete representation of data with actual inputs is necessary.

In order to provide a concrete representation of data, BPEL variable types should be analysed with respect to the documents they reference (WSDL) and any operations performed on variables should be processed. For this purpose a set of query and mapping

rules should be applied in the SXM abstract model along with any WSDL document referenced by the original process in order to refine the original model to a more concrete. During this transformation the abstract inputs will be mapped to concrete in order to facilitate testing. This paper focuses on the initial set of translation rules for translating a BPEL process to an abstract SXM model.

Table 1 shows the mapping of the most important WS-BPEL 2.0 elements into the corresponding SXM ones. BPEL elements defined in the WS-BPEL 2.0 specification are enclosed in angle brackets while their attributes (and their values) are displayed in italics. SXM states are written in block capitals while the transition functions are written in camel case.

BPEL processes are stateless and long running: a listener is waiting for consumers and upon client invocation a new instance is created to serve the specific request. The initial client invocation is typically defined in BPEL through the first <receive> element. However, <receive> elements can be also used to receive further information from the consumer or the involved services at a later point so the initial invocation is distinguished by setting the element's attribute *createInstance* to the value *yes*. In some cases a <pick> element with the same attribute and value can be used to conditionally instantiate a process according to the received arguments. These two cases are referred by the standard as *start activities* and every process is required to have at least one.

In any of these cases the processing begins and it is modelled as a transition from the dummy state WAITING to the state PROCESSING. If the process is instantiated through a <pick> element multiple PROCESSING states and clientInvokation functions should be defined; one for each of the cases. The state WAITING serves the role of the initial state for the SXM and is also used as a returning state when the processing has been completed.

The BPEL element <invoke> is the means of invoking other services within a process. Upon occurrence of <invoke> a new SXM function is created, named after the values of the attributes *partnerLink* and *operation*, which is applicable to the most recently created state and leads to a new state named after the same attributes.

If for example the following code is processed just after the occurrence of the initial <receive>:

```
<invoke partnerLink="FlightAgent"
            portType="buy:FlightAgentPT"
            operation="PurchaseTicket"/>
```

the result will be a new function invokeFlightAgentPurchaseTicket which is applicable to the state PROCESSING and leads to the new state FLIGHTAGENT_PURCHASET-ICKET. A <reply> element may have the exact same result with the semantic exception that it is a response to a previously invoked operation by a partner service; thus it is treated similarly.

A similar case to the <invoke> and <reply> is the non starting <receive> activity, that is any such element without a *"yes"* value in the attribute *createInstance*. Such an element indicates that the process is blocking, waiting for an external invocation or callback with some kind of result. This is very typical in BPEL processes as in their majority they invoke external services requesting certain information and cannot

proceed until they get a reply. Once such an element is triggered, upon an external service invocation, any data sent from the partners are stored in the variable defined in the attribute *variable*.

Table 1. WS-BPEL 2.0 activity mapping to SXMs.

BPEL Activity	SXM Translation
<receive> or <pick> with *createInstance="yes"*	Define WAITING as the initial state and function clientInvocation as applicable to state WAITING and leading to state PROCESSING
<invoke>	Define a new function named invokePartnerlinkOperation applicable to the last state within scope and leading to the new state named PARTNERLINK_OPERATION
<reply>	Define a new function named replyToPartnerlinkOperation applicable to the last state within scope and leading to the new state named PARTNERLINK_OPERATION
<receive>	Define a new function named receiveOperationFromPartnerlink applicable to the last state within scope and leading to the new state named OPERATION_FROM_PARTNERLINK. Update the model's memory with any variables received as declared by the value of the attribute *variable*
<invoke> or <reply> with *partnerLink* identical to this of the starting <receive> or <pick> activity	Define the function replyingToClient which is applicable to any leaf states and leads to the new state COMPLETED. Define also a function named resetToWaiting applicable to the state COMPLETED and leading back to the state WAITING
<if>, <elseif>, <else>	Apply the condition within the <if> or <elseif> element as a guard to any function created due to occurrence of other elements (<invoke>, <reply> etc.) in the same scope. Similarly with the <else> where the guard should be the negation of the union of any conditions found in <if> and <elseif> elements in the same scope
<variable>	Define a new memory variable
<from>, <to> within <copy>	Copy the content of the variable references in the element <from> to the element <to> as the result of a dummy function
<exit>	Define the function terminatingProcess which is applicable to any leaf states and leads to the new state TERMINATED. Define also a function named resetToWaiting applicable to the state COMPLETED and leading back to the state WAITING
<sequence>, <variables>, <copy>, <assign>, <empty>, <scope>	Ignore the elements but process their content (virtual elements)
<correlationSets>, <correlationSet>, <documentation>, <wait>	Ignore completely the elements and their content (irrelevant to modelling)

BPEL <variable> elements within a <variables> element denote variable declaration. As the element <variables> is used only as a container for the individual <variable> elements and it lacks of any attributes, the element should be ignored and proceed to processing its content. The most typical use of the element is in the start of a BPEL process as a way of defining what in common programming languages is known as global variables. Consequently such variables are incorporated in the memory of the SXM model with the same initial value or null if one is not specified. Variables in BPEL can be defined within a certain scope (i.e. local variables) whereas they are not accessible beyond this and have a short term role; usually for performing a conditional invocation. As the addition of a variable in the SXM memory would alter its memory type and thus the machine itself, local variables should be treated in exactly the same way as global ones during the static analysis of the BPEL document. In order to avoid naming conflicts the scope's name is prefixed to the name of the variable.

Variable manipulation in BPEL is possible within <assign> elements. The element itself has no meaningful information or attributes[1] and thus its content is processed directly. Within this element the assignment is indicated by a further <copy> element which in turn denotes the source and the destination variable within the elements <from> and <to>, respectively. The <copy> element itself does not convey any useful information for the modelling and thus is ignored[2]. In terms of SXM modelling, a variable assignment denotes memory alteration and thus it should be triggered by a processing function. For this reason each variable assignment is modelled as a function named copyFromTo (where "From" and "To" is named after the corresponding elements) which is applicable to the current state and leads to itself, updating the memory according to the new assignment.

Synchronous BPEL processes are those that typically complete execution in a short time and terminate either with a final return of results to the client (request-response services) or when the last invocation is made (request-only services). In the first case this is signaled with a <reply> element with a *partnerLink* value identical to the one of the element used to instantiate the process (either a <receive> or a <pick> with an attribute of *createInstance="yes"*). Upon occurrence the function replyingToClient is defined leading to the state COMPLETED and the function resetToWaiting as applicable to previous and leading to initial state WAITING. The function replyingToClient is applicable to any "leaf state", that is a state defined last within a scope that can follow the final reply. While this function lead directly back to the initial state, the dummy state COMPLETED is introduced for clarity purposes as the resulting path when animating this SXM model is more readable.

An identical effect with the aforementioned has the element <invoke> with a *partnerLink* value identical to the instantiating element (as described above). This alternative is used by asynchronous request-response processes, which usually take longer to

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[1] The only available attribute of <assign> is *validate* which refers to value validation against the associated XML or WSDL data definition and it is relevant only to the service deployment.

[2] There is an optional *keepSrcElementName* attribute for <copy> which denotes whether the name of the destination element will be replaced by this of the source; in any case it is irrelevant to the modelling.

respond, in order to asynchronously notify the consumer upon results via a callback port. Finally, both synchronous and asynchronous BPEL processes may terminate upon occurrence of an event without any further processing, such in cases of fatal errors, by using an <exit> activity. In the SXM model the result of such an activity is similar to the above with the only exception being the naming of the function and the last state as a means of conveying this information during model simulation.

Finally there are some elements, referred to as "virtual" in the specification, which serve mainly as holders for nested statements and thus are ignored during the translation but their content is processed nonetheless. On the other hand, <correlationSets> and <correlationSet> which are used to differentiate between multiple instances of the same process are completely irrelevant to the modelling and thus are ignored completely. In this category fall also <documentation> which is used to document process in a human readable way and <wait> which indicates that the process should halt for a certain amount of time.

5 Discussion and Future Work

SXMs offer an important advantage on modelling Web services and service compositions due to their associated testing strategy. Moreover, research in the recent years has demonstrated their applicability on the domain of services. In this paper we set the foundation for an automated translation of BPEL orchestrations to SXMs. Once a composition is modelled as an SXM it can be simulated via the X-Machine Description Language (XMDL) or the Java Stream X-machines (JSXM) animators in order to provide an informal validation during the early stages of development. Such animations can be shared and observed by stakeholders without technical skills or formal background and provide early feedback to the developers.

Additionally, the model can be tested using the associated testing strategy. It may be possible to generate the test cases in an automatic or semi-automatic manner by using the existing tools for functional testing of single services but this is subject to further research. Finally, the composition can be model checked to verify the presence or absence of the desired properties.

The next step is to finalise the translation rules from WS-BPEL 2.0 to abstract SXM models, including loop, flow, and event activities. Next, the abstract model should be able to be refined to a more concrete one, with a detailed representation of data. An accurate representation of variable manipulation and conditioning may be cumbersome as BPEL allows the use of expressions written in XML query languages within these statements such as XPath and XSLT. To tackle this, as shown in figure 1 of page 5, a new set of mapping rules should be devised which along with the WSDL documents will result to a concrete SXM model, ideal for testing. After completion of this stage, we will be able to determine upon which degree the process can be automated and thus develop a tool to assist the whole process. Furthermore, a real world case study will be employed to demonstrate the applicability of the translation rules and any tool developed.

As a future direction we would like to investigate how WS-CDL choreographies could be modelled with SXMs as they are the only practical alternative to BPEL orches-

trations for composing Web services. Due to the decentralised nature of choreographies and the fact that each service acts as an autonomous peer, a modelling approach with Communicating SXMs [38] seems more appropriate at this time.

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Design Challenges of Developing an Online PhD Supervision Community

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Abstract. The numbers of PhD students studying in online mode are greater than before. This mode of studying is challenging in many ways. The supervision process is different from traditional campus based supervision and, thus, different solutions and approaches are needed. For instance, there are challenges of admittance online PhD students into the wider academic community. To address the identified needs and challenges in online doctoral training, an initial design of an online PhD community of practice environment with opportunities to collaborate, interact and form supportive networks is proposed. The paper discusses the challenges behind the design of the environment and also suggests some possible directions for future development. The PhD community of practice environment will address the concrete needs faced by IMPDET (International Multidisciplinary PhD Studies in Educational Technology) PhD students. The paper includes the preliminary analysis of the challenges reported by the IMPDET students and the suggested design solutions to meet the challenges. The suggested solutions can also be applied to improve the supervision process of online PhD programs in other fields

Keywords: online supervision of doctoral studies, community building

1 Introduction

The rapid growth of Information and Communication Technologies (ICT's) has resulted a new innovative drift upon delivering online doctoral programmes and particularly supervising doctoral students at a distance. Therefore, the numbers of PhD students studying in online mode are greater than before. The online mode of studying doctoral studies is challenging in many ways and various design challenges for online PhD programmes can be identified. It can be assumed that the general problems of doctoral education are amplified in online learning settings [2] [12] [22]:

1. students rarely finish their theses within the expected time;
2. the studies do not provide independent learning skills (e.g. time management, efficient communication strategies) to the students;
3. the supervision and support is often based more on initiating rather than direct training or instruction; and

4. there is no systematic and established supervision system for thesis writing and doctoral dissertation work;

In online settings, the supervision process is different from traditional campus based supervision and, thus, different solutions and approaches are needed. For instance, there are challenges of admittance online PhD students into the wider academic community. Online PhD students also face specific problems related to motivation issues, independent working and self-monitoring aspects of their work [6] [10]. Online PhD students have limited social interactions that can cause a feeling of isolation and lack of community awareness, that affect students' drive and confidence to work over a long period time. For instance, Lin [16] has identified that unavailability of the supervisor and the lack of prompt and structured responses are among the main factors affecting the motivation of online learners. Similar challenges have been identified also in the IMPDET (International Multidisciplinary PhD Studies in Educational Technology) online doctoral studies. According to Hartikainen et al. [14] there is a clear need in IMPDET for establishing an online supervision community where supervisors and students will actively contribute towards the improvement of the learning environment. In this paper, we will report the preliminary design steps towards an online community of practice environment in IMPDET following a design research approach [3]. We acknowledge the fact that examining the challenges of online learning has been studies before, but we examine the problem from a community of practice point of view. First, we will analyse the literature related to online supervision in order to identify design ideas, good practices and requirements of the PhD supervisory environment. Second, we will analyse the interviews conducted among IMPDET online PhD students in order to identify common problems and challenges faced by the IMPDET students. Based on the two separate analyses, we identify five design aspects for the online community of practice environment in: communication, collaboration, community building, supervision relationship and processes and knowledge management and academic skills. Finally, we will propose preliminary plans how the design aspects are realized in order to enhance the supervision and community aspects of IMPDET studies.

2 Design Ideas and Requirements from Literature: Challenges and Solutions in Online Supervision

2.1 Building up a Fruitful Supervision Relationship

Among the most significant factors when supervising scientific work is a fruitful supervision relationship between a student and a supervisor [12]. Additional challenges arise when the students and supervisors are from different cultural backgrounds, as with the case of IMPDET students. They might have varying world views, communication practices, expectations and technological skills and knowledge. For instance, in the western educational culture, teachers often emphasize critical thinking skills, debate and discussion, while students coming from with different cultural background might have greater respect to the authorities and

existing knowledge [21]. Sussex [25] refers to Cadman to point out that culture plays an important role in building up the student-supervisor relationship. Language is also among the important aspects in a student-supervision relationship. Bates [5] notes that examples, idioms and writing styles may not easily transfer between cultures. In an extreme case both instructors and students need to work with a language which is not their mother language. This can cause serious problems with communication, collaboration and interaction. Griffiths and Griffiths [13] reflect on their experiences on running international online programs in Australia. They report that students with non-Western cultural background had problems with Western oriented print materials, experienced difficulties to study in isolation and they were not satisfied with the interaction and dynamics of online courses. Additionally Wisker [27] argues that the more the supervisor and student can discover about their background experience, cultural context and influences, the chances to have a healthy supervision – student relation are bigger. The online settings create additional challenges in establishing, maintaining and supporting effective supervision relationships between students and senior members of the research community.

2.2 Motivational Aspects and Study Skills

Lin [16] argues that lack of motivation is observed mainly due to the unavailability of the supervisor and the lack of prompt and structured responses. The lack of motivation is observed especially in the transition period where the student is in the phase of receiving knowledge studying different modules and the phase producing knowledge where he is asked to produce the concrete research results i.e. writing the thesis or research papers. While the traditional route students have the opportunity to build a moderate relationship with their supervisor via the frequent face to face meetings the online students have to work hard in order to have a continuous and balanced relationship with their supervisor. This can also affect the motivation of the students to pursue their studies [24][25]. It has also been identified that time management, creation of supporting communications patterns and self-regulation are important skills in online learning settings [6][10]. Additionally, in online supervision, the limited social interactions with a possible feeling of isolation and lack of community awareness can affect students' motivation and confidence to work over a long period time. According to Daniels [11] this can be overcome with developing a sense of institutional belonging. This approach seems to have a great deal of aptness especially in online supervision cases where the supervisor and the student meet occasionally. However, there is a challenge to get all involved in the community building. According to Barrett [4], only a small group of students were active participants. Additionally it was noted that the established community was heavily dependent upon individuals who were active participants and this way the kept the interest high in the conversation rooms. In conclusion taking into consideration that the goals of doctoral students are rather individual than cooperative it very difficult to keep the focus on developing an online learning research community [24][4].

2.3 Good Practices for Online Supervision

Nyquist and Wulff [22], Lindner et al. [17] and Unwin [26] suggest the following solutions for online supervision:

1. multiple supervisors or mentors work together with a student; This way the supervision burden can be distributed among the research group.
2. timely interaction is organized between the student and the supervisor(s) supported by appropriate technologies. Attention should be paid to build up the communication practices and sense of belonging to the research community [21] [7]
3. peer groups with appropriate size and members should be established in order to provide peer support and guidance. Group learning and peer support is specifically important for students who are just starting their doctoral studies [23].
4. constant monitoring of the interaction between students and supervisors. Muirhead and Blum [20] recommend that a supervisor should create a clear timeline with milestones to the students. The time management is also very important and students and supervisors should keep tight contact throughout the study process.
5. the expectations towards the PhD studies both from student and supervisor side should be made as transparent as possible.

2.4 ICT support for online supervision

A common technology solution for online supervision is to use general virtual learning environments, such as Moodle LMS or Blackboard for supervision purposes. The results of using Moodle in POURS initiative indicated that supervision time was reduced with overall improvement of the quality of the dissertations using the Moodle discussion forum method [18]. The initial results of Hatchery project indicated that LMS based supervision support solution decreased the dropouts among master students. The following supervision solutions have been implemented by using virtual learning environments:

1. online synchronous and asynchronous collaboration tools and discussion forums. For instance, the POURS initiative all discussions related to the research process were done in the open forum to enable students to learn from each other, avoid narrow focus on their own research topic/methodologies [18].
2. supervision arrangements to support students' working processes and thesis writing processes, such as [19] *Calendar, notice board and a discussion forum* for topical questions are used for organizing the thesis writing process. *Monthly exercises* and tasks blocks for common activities relevant for PhD students and *Information bank block* (informative texts and/or links for writing, literature lists and video clips).

3. peer support and community of practice solutions; Colbran [8] presents a custom website with a aim to create a supportive network and increase a sense of belonging to a research culture. The web site had, for instance, the following features: *reflective journal* in which students record their progress on each activity they identify as important to their thesis. ***Exercises designed to direct student*** attention to significant issues in their thesis development and ***private virtual correspondence files*** (containing summaries of meetings, comments, survey instruments etc.).

3 Concept Design of the IMPDET Supervision Environment: Combining IMPDET Challenges with Literature Analysis

In this section, we will first analyse the interviews conducted within IMPDET students in order to analyse the challenges identified within this particular community of practice. In addition, we will identify five design aspects of the IMPDET supervision environment. The design aspects are based on the identified challenges of IMPDET studies and the needs and requirements of online doctoral studies identified in the previous chapter.

3.1 Analysis of IMPDET Students Interviews

IMPDET (International Multidisciplinary PhD Studies in Educational Technology) is an online PhD degree programme, which allows students to study a degree either in Computer Science or Education. The current ICT solutions applied in the IMPDET studies are Moodle LMS system for implementing online course, Adobe Connect Pro and Skype for online synchronous presentations and group work and IMPDET website for distributing information related to the studies.

In order to find out the experiences of IMPDET students, we conducted an interview with the students in year 2007. Our initial analysis of the transcript suggested that there might be several challenges faced by the IMPDET students as described in the already reviewed literature. The interviews revealed the following aspects, which are relevant for the design of the supervision environment

1) the students appreciated prompt feedback of their work and during their studies. One student commented on his experiences in one of the courses:

".. present course there are web-discussions and we receive feedback right away, which is so good for learning during the course."

2) students reported feeling of isolation and lack of community support. For instance, the following comments were given about the isolation and feeling of not really belonging to the research community

"IMPDET is organized fully as a self paced learning with little or no interaction with professors unless you are on campus. I felt at times isolated…."

3) the students were anticipating more structured and guided meetings with supervisors. One of the interviewers commented these aspects as follows;

*"**Skype office hours** for supervisors, more information about members and research topics, maybe there is but where...I would like to see a place where I could **work with both of my supervisors**. I always get comments from both and this leaves me with the problem that whom I should follow...The lack of supervision meetings…Perhaps IMPDET should **have some guidelines for supervision that would push students to communicate with their supervisors** regularly."*

4) the students wanted better interaction among peers and more powerful tools for communication. This issue was particularly commented by several students in the interview.

*"Perhaps there could be more communication and collaboration tools present ...This would also **make the IMPDET community stronger**. It is much easier to ask advice or opinion from a person if you know him/her well"*

3.2 Design Aspects of the IMPDET Supervision Environment: Mapping the Challenges Faced by IMPDET Students to the Needs, Requirements and Best Practices of Online Doctoral Studies

In **Table 1**, we have identified five design aspects for the IMPDET community of practice environment, communication, collaboration, community building, supervision relationship and processes, knowledge management and academic skills. We map the design aspects to the various issues discussed in chapter 2 and section 3.1.

Design aspect	Literature	IMPDET
DA1: Communication	- unavailability of the supervisor and the lack of prompt and structured responses (Lin, 2008) - language and cultural issues among people coming from different cultural background; examples, idioms and writing styles may not easily transfer between cultures (Bates, 1999) - different expectations about communication practices and expectations of interactions (Murphy et al., 2007)	- expectations for more extensive communication possibilities among peers and between the supervisor
DA2: Collaboration	- online students' motivation can be poor because of lack of social contact, peer support and possibilitities for collaboration (Bozarth et al., 2004)	- students reported feeling of isolation and lack of social contacts within the IMPDET community

DA3: Community building	- admittance of online PhD students into the academic community - feeling of isolation and not part of the community (Defoulas, 2006) - attention should be paid to build up the communication practices and sense of belonging to the research community (Murphy et al. 2007; Butcher and Sieminski, 2006)	- students were expecting more community support and feeling to be an important part of the IMPDET programme
DA4: Supervision relationship and processes	- challenges of maintaining the supervision relationship in online learning settings (Evans et al., 2004) - there is often no systematic and established supervision system for doctoral dissertation and thesis writing work (Amundsen and McAlpine, 2009)	- the students were anticipating more structured and guided meetings with supervisors - the students appreciated prompt feedback of their work and during their studies
DA5: Knowledge management and academic skills	- the studies do not provide academic and learning skills sharp contrast in learning strategy between lectures and thesis writing (Evans et al., 2004). - the supervision is often based more on initiating rather than direct training or instruction - online learners face specific problems related to motivation issues, independent working and self-monitoring aspects of their work (Bozarth et al., 2004; Dafoulas, 2006). - the expectations towards the PhD studies both from student and supervisor side should be made as transparent as possible.	-

Our analysis show that the identified five design aspects are supported by the findings of the literature about the challenges and requirements of online doctoral studies and the needs and expectations of IMPDET students. Therefore, they are viable and valid in order to develop the IMPDET community of practice further on.

4 First Plans to Implement the Design Aspects of the Community of Support Environment in IMPDET

We noticed that there is a clear need to create new solutions to support online supervision processes in IMPDET, especially from the perspectives of community building, communication and collaboration. Our long term aim is to design and develop an environment that would support the IMPDET community of practice in the following ways:

- Supports supervisors and students learning needs and academic goals i.e. address the students issues of late finishing and support tool for supervisors in their supervision work;
- Provides tools for monitoring and reporting status of student progress;
- Engage online PhD students into the IMPDET academic community;
- Attract and engage students in the scientific knowledge producing process in a motivating way;
- Enhance communication and the status of belonging in the research community, student with student and student to supervisor;
- Create and support research networks community in order to make the tacit knowledge explicit.

In **Table 2**, we propose preliminary solutions for the five design aspects of the IMPDET community of practice environment. One of the promising technologies to be used in IMPDET studies are Web2.0 tools. There is a rapid growth in popularity and acceptance of Web 2.0 technologies such as: Myspace, Facebook, YouTube, Flicker, Blogger, Wikipedia, Skype, Zerotero etc. due to their accessibility at no cost. According to Anderson [1] there are clear indications that Web 2.0 phenomena and the wide umbrella of technologies that uphold this term can have outstanding benefits when supporting learning. Moreover Cotterill et al. [9] argue that there are 3 broad approaches in which Web 2.0 tools and technologies can be used in supporting learning, all valid and equally important:

- Using the existing tool and technologies (Wiki, Myspace, Facebook etc.)
- Individual hosting of the social networking software and tools by Institution though controlled (Elgg, Mahara, Ning et.)
- Integrating them in the existing VLE's or other institutional systems.

Our current main plan for development of the online supervision IMPDET community environment incorporates a combination of the last two approaches using the Mahara e-portofolio tool, also compatible with the Moodle VLE currently adopted by the IMPDET for hosting the ECTS courses and learning tasks available to students. Mahara (http://www.mahara.org/) open source electronic portfolio is developed in 2006 by the New Zealand e-Portfolio Project. Mahara is a fully featured web-based e-portfolio, designed essentially as a learning portfolio owned by the user, consisting of collaborative and communication tools that can supports learning and development. Four main qualities of Mahara should be considered: accessibility, ownership, interoperability and transferability. Moreover the design features of Mahara allows uploading of multimedia files incorporated as "artifacts" in any number of blogs or views that can be shared with other individuals or communities. Mahara communications tools provide an environment for collaboration, peer and self assessment and personal development based on Laurillard's 'conversational framework' [15] and therefore maximises the potential of using the e-portfolio as a supporting tool for reflective learning, assessment and development. Mahara can be used as an effective tool to reflect the nature of student-supervisor and student-student relationship and its learning practice. The purpose of adopting the Mahara e-portfolio

tool as a supporting supervision tool in IMDET community environment is to advance the learning process and improve the cooperation within the community through:
The proposed design aims to support students in giving, and responding to, peer and supervisor's feedback and sharing learning paths in building strong relationships among the members of the IMDET community.

Table 2: Defining preliminary design plans in order to realize the identified design aspects

Design aspects for IMPDET community of practice environment	Preliminary design plans
DA1	To create new opportunities for IMPDET students to communicate with each other in order to get better acquainted with each other's research topics.
DA2	To create new solutions for collaboration among peers (student-supervisor, student-student) with common research interest A journal for some reflective thoughts and recording meeting minutes between student/supervisor or peer reviews in Mahara
DA3	Mahara e-porfolio to connect with the community, share experiences and learn to know the peer students. The idea of Mahara is to encourage students and supervisors to develop and share their individual learning paths. Building a structured research community; social networking feature of Mahara.
DA4	Self directed learning by systematically setting and reviewing personal goals; a presentation tool for showing students progress in Mahara. Structured support to mentor the students. New practices are implemented for peer student support.
DA5	Collecting and using evidence to critically reflect the supervision and learning path. A file repository in Mahara can be used to share documents between student and supervisors; e.g. make the tacit (e.g. hidden) knowledge of a research community visible to students who are not able to learn the tacit knowledge by participating to daily activities of the research group. More systematic possibilities to learn important academic skills and various aspects related to the PhD study process.

We can also divide the design plans of the IMPDET community of practice environment into short and long term solutions. In a short term, we will aim to implement the following solutions: 1) weekly Skype or phone office hours; 2) extension of IMPDET PhD days in order to engage more online learners. For example; presentations in videos to be shared with the community PhD days are organized around specific theme related to the PhD studies; e.g. literature review; research and proposal writing; planning and conducting research activities; ethical issues in research work; and disseminating the research results; 3) a mentoring system where existing (experienced) students to mentor new comers and; 4) Implement solutions based on the identified "good practices" in online doctoral programmes. For instance, peer groups with appropriate size and members should be established. Group learning and peer support is specifically important for students who are starting their doctoral studies (Shacham and Od-Cohen, 2009). In a long term, we will test and try

out different solutions and environments (including Mahara) in order to support the IMPDET community of practice. We will also investigate how various Web2.0 tools could be applied in order to realize the identified deign aspects.

5 Conclusion and Future Work

In this study we have outlined the challenges faced by online PhD student and more specific by the IMPDET students. The paper includes the preliminary analysis of the challenges reported by the IMPDET students and the suggested design solutions to meet the challenges. We identified five design aspects for the IMPDET community of practice environment and proposed preliminary solutions in order to realize the design perspectives. Thus, we have reported our first results of the design research process aiming to develop a community of practice environment to support online PhD studies. The next step is to start designing and implementing new solutions to the IMPDET studies within the following general perspective;

1) Exploration of and incorporation of Web 2.0 technologies in the online supervision system as a support for social learning;
2) Test and evaluation ICT novel communication tools (VoIP, video and chat) as a support for reflective learning and exchange of ideas;
3) Enhancement of strategies towards the integration and sustainability of online supervision and community learning;

The aim is to find viable and sustainable solutions that are also relevant for other contexts. We will also aim at producing new scientific knowledge, for instance, related to the use of Web2.0 tools in supporting the work of research community of practice.

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Using Machine Learning for Preoperative Peripheral Nerve Surgical Prediction

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Abstract. The aim of this paper is the comparison between three machine learning algorithms, Part, J48, and Naïve Bayes, in order to discover the algorithm with the highest accuracy in the prediction of the peripheral nerves surgery results. We have assessed a lack of effective analysis tools to discover hidden relationships and trends in data collected in healthcare systems. Often clinical decisions are made based on doctors' intuition and experience rather than on the knowledge of rich data hidden in the database. This practice leads to errors and excessive medical costs. Machine Learning techniques can help the integration of computer-based systems in the healthcare environment. We analyzed and applied these machine learning algorithms on the filtered data, collected from previously operated patients who underwent surgery on peripheral nerves. We discovered that with 10-fold cross validation the algorithm J48 resulted to be the most accurate, while when using the percentage split the J48 and Part algorithms were the most accurate ones. However Naïve Bayes resulted to be the most stable changing rate.

Keywords: machine learning, data mining, peripheral nerve surgery, prediction rules.

1 Introduction

Information systems use in healthcare is rapidly increasing and they are being used to collect more and more considerable amounts of data. As the volume increases, the gap between data generation and data understanding is widening. The challenge faced nowadays is the acquisition of proficiency in understanding and interpreting clinical information to attain knowledge and wisdom and to provide scientific decision-making in the treatment of disease.

Knowledge discovery can be defined as the extraction of implicit, previously unknown, and potentially useful information from real world data, and communicating the discovered knowledge to people in an understandable way [1], [2]. The sheer amount and breadth of data requires development of efficient methods for knowledge and information extraction that can cope with the size and complexity of the accumulated data. There are numerous examples of successful applications of machine learning (ML) in areas of diagnosis and prevention [3],[4],[5] prognosis and therapeutic decision making [6], [7]. Machine learning comprises a set of techniques that can discover previously unknown regularities and trends from diverse datasets, in the hope that machines can help in the often tedious and error-prone process of

acquiring knowledge from empirical data, and help people to explain and organize their knowledge. Machine learning encompasses a wide variety of techniques used for the discovery of rules, patterns and relationships in sets of data and produces a generalization of these relationships that can be used to interpret new unseen data [8]. Machine learning can be used to build a system capable of the autonomous acquisition and integration of knowledge, resulting in increased efficiency and effectiveness. The aim of the study is to apply and analyze different machine learning techniques for the prediction of the most influential factors in the result of the peripheral nerve surgery.

1.1 Peripheral Nerve Surgery

Peripheral nerve surgery encompasses acute nerve injuries, entrapment neuropathies and nerve sheath tumors. It is practiced by surgeons of varying backgrounds with expertise in orthopedic, neurological, plastic and reconstructive surgery. Increasingly, several international centers of excellence have emerged whose surgeons are experts in the field and which offer the multidisciplinary care that patients with peripheral nerve disorders require. With the advent of adjuvant therapy and aggressive resuscitative measures in trauma, surgical amputation for extremity malignancies/injuries is no longer the time honored treatment. It is this change in the purview of cancer/trauma treatment that has increased the need for peripheral nerve reconstruction and subsequently the restoration of the quality of life, form and function. Failure to restore sacrificed or injured nerves can lead to the loss of muscle function, impaired sensation and/or painful neuropathies.

Our multiple researches (on readily available searching tools such as Google, Pubmed, Medline, Cilea digital library) for previous studies that focus on the prediction of peripheral nerve surgery through machine learning algorithms did not come to any results.

The factors believed by nerve recovery specialists include time from onset of injury to surgery, location of damaged nerve and distance to muscle[9]. The main aim of the study is to determine the most accurate machine learning algorithm that better predicts how the timing of surgery, location of the damaged nerves, and distance from muscle influence on the outcome of peripheral nerve surgery. A database of nerve injury and treatment exists at the Neurosurgery Service, University Hospital Centre "Mother Theresa", Tirana, and one of the services that this national centre offers is the treatment of peripheral nerve injury.

1.2 Machine Learning Methods

We want to use some supervised machine algorithms to find the most accurate algorithm that best predicts surgery results. We have chosen J48, Naïve Bayes and PART machine learning algorithms. Decision tree is one of the powerful classification algorithms and is often used in medicine for the prediction. Decision Trees are statistical models for classification and data prediction. These models take a

"divide-and-conquer" approach: a complex problem is decomposed in simpler sub-models and, recursively, this technique is applied to each sub-problem [10]. For this work we have chosen one of the most popular algorithms for building decision trees, the C4.5. WEKA (Waikato Environment for Knowledge Analysis) uses the J48 algorithm, which is the implementation of the C4.5 decision tree algorithm. Naïve Bayes is one of the simplest probabilistic classifiers. The model constructed by this algorithm is a set of probabilities. These probabilities are estimated by counting the frequency of each feature value in the instances of a class in the training set. Given a new instance, the classifier estimates the probability of the instance belonging to a specific class. The exact calculation uses the Bayes theorem. The algorithm is also characterized as Naïve, because all the attributes are independent given the value of the class variable. This is called conditional independence. Despite this strong assumption, the algorithm tends to perform well in many class prediction scenarios. Experimental studies suggest that Naïve Bayes tends to learn more rapidly than most induction algorithms. Therefore this algorithm was chosen to compare the ease-of-learning. PART constructs a rule set on the basis of information gain ratio. This implies that the obtained rule sets are biased with the correctness of each classification problem.

2 Implementation of the Experiments

The data analysis and classification study was done using the WEKA software environment for machine learning. WEKA is a collection of machine learning algorithms for data mining tasks. WEKA is a cross-platform open source, and probably the most popular machine learning based application. It was written in Java and developed by the University of Waikato [11].

In [12] we have used decision tree J48 algorithm to discover interesting prediction rules on this data. The patterns found will help the surgeons to determine the percentage and the time of nerve recovery after surgery. The problem of time lapse from nerve injury to surgery is, among other less critical factors, identified as an important factor in determining the outcome of surgery. This conclusion correlates with the up-to-date medical literature[13],[14]. Other factors influencing the outcome include type of injury, lesion location, distance from muscle and length of nerve graft if applied[9].

The data set was compiled following a cleaning up of 189 (110 males and 79 females) records of patients who underwent peripheral nerve surgery during a three-year period from January 2006 to December 2008.

We constructed a scale for evaluation of nerve recovery by introduction of an integer value ranging from 0 to 3. This evaluation index is constructed by asking the patients how they were feeling at a predetermined time after surgery. A value of 0 was assigned if the patient felt no recovery at all, 1 if he or she felt a level of recovery of between 0 and 35 per cent, 2 between 35 and 70 per cent, and 3 if the recovery was more than 70 per cent. Clinical assessment of the level of nerve recovery was undertaken at the end of the first month, third month, sixth month and one year after surgery. We have classified the result of the surgery into three categories: low, medium, and high. The category is determined by the sum of the indexes evaluated

after each period (one, three, six, and 12 months after the surgery). The irrelevant attributes have been eliminated and only 7 of them have been kept which were considered and found significant for our study [12].

Time from nerve injury to surgery (numeric attribute):
The interval of the values is spread from zero to 231 months, with an average value of 19.81 months.

The result of the operation (based on the valuation index) is a nominal attribute:
high (27 cases), medium (83 cases), low (79 cases).

Type of lesion (nominal attribute):
entrapment (91 cases), traumatic (90), tumor (8 cases).

Location (nominal attribute**):**
high periphery (141 cases), low periphery (31 cases), brachial plexus(15 cases), lumbar plexus (2 cases).

Type of repair (nominal attribute):
Others: decompression, tumor, neuro-vascular decompression, tumor removal, (100 cases), Neurolisis (45 cases), Graft (40 cases), Neuroraphia (4 cases).

Distance to muscle (numeric attribute)**:**
The interval of the values is spread from 0 to 220 mm with an average value of 21.8 mm.

Graft length (numeric attribute):
The interval of the values is spread from 1 to 12 cm, with an average value of 3.2 cm.

3 Results and Discussion

In the experiments, the original data set was partitioned into two mutually disjoint sets: a training set and a test set. The training set was used to train the learning algorithm, and the induced decision rules were tested on the test set. The 10-fold cross validation was performed to test the performance of the three models. The results of the experiments are summarized in the tables 1, 2, 3 and the evaluation of the methods is illustrated in the figures 1 and 2.

Let p_i be the predicted values and a_i the actual values, then the estimates are evaluated as below:

Kappa statistics: The Kappa parameter measures pair wise agreement between two different observers, corrected for an expected chance agreement. For example if the value is 1, then it means that there is a complete agreement between the classifier and the real world value.

Mean absolute error averages the magnitude of the individual errors without taking account of their sign.

$$\frac{|\, p_1 - a_1\, | + \ldots + |\, p_n - a_n\, |}{n} \tag{1}$$

Mean-squared error tends to exaggerate the effect of outliers—instances whose prediction error is larger than the others.

The root means squared error is the square root of the average quadratic loss.

$$\sqrt{(((p_1 - a_1)^2 + \ldots + (p_n - a_n)^2)/\text{n})} \qquad (2)$$

Table 1. Comparison of Performance using 10 cross validation

Evaluation Criteria	Classifiers		
	J48	NB	Part
Kappa statistic	0.3328	0.2374	0.2855
Mean absolute error	0.3368	0.3426	0.3435
Root Mean Squared Error	0.4389	0.4709	0.4431
Prediction accuracy	60.3175 %	52.9101 %	57.1429 %

In Table 2 the results of the experiments according to the accuracy of the class are summarized. Only the average values are shown.

Table 2. Detailed accuracy by class (average values)

Classifier	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area
J48	0.603	0.271	0.6	0.603	0.592	0.657
NB	0.529	0.28	0.579	0.529	0.528	0.669
Part	0.571	0.282	0.566	0.571	0.564	0.657

The first two columns of the table are the TP Rate (True Positive Rate) and the FP Rate (False Positive Rate). TP Rate shows the percentage of instances whose predicted values of the class attribute are identical with the actual values. FP Rate shows the percentage of instances whose predicted values of the class attribute are not identical with the actual values. The next two columns are terms related to information retrieval theory.
Precision is the percentage of retrieved documents that are relevant:

Precision=TP/(TP+FP)   where TP is True Positives, FP is False Positives   **(3)**

Recall is the percentage of relevant documents that are returned:

Recall =TP/(TP+FN) where FN is False Negatives   **(4)**

F-measure is a way of combining recall and precision scores into a single measure of performance. The formula for it is:

F-measure=(2 × Recall × Precision)/(Recall+Precision)   **(5)**

ROC curves are being used to judge the discrimination ability of various statistical methods for predictive purposes. ROC area is a way to measure the goodness of a classification algorithm by plotting a certain curve and measuring the area under this

curve. The range of the ROC area, is 0 to 1. A perfect test (one that has zero false positives and zero false negatives) has an area of 1.00.

In figure 1 the three algorithms are compared using 10-fold cross validation according to prediction accuracy.
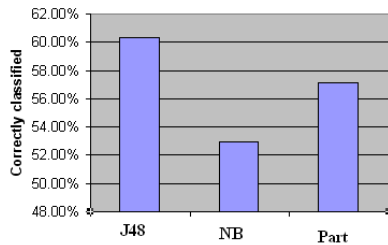

Fig.1. Prediction accuracy using 10-fold cross validation

As shown in Figure 1, J48 predicts better than other algorithms. Among the three classifiers used for the experiment, the decision tree induction algorithm (J48) and Part algorithm provide better prediction accuracy. The accuracy rate of Naïve Bayes classifier is the lowest among the three machine learning techniques.

The alternative to cross-validation is the holdout method. We can specify the percentage split (the default is two-thirds training set and one-third test set). The classifier is evaluated on how well it predicts a certain percentage of the data which is held out for testing. We will use 50, 70 and 90 % of the data for the training.

Table 3. Comparison of Performance using percentage split

Criteria of Testing	Machine Learning algorithms		
	J48 Accuracy(%)	NB Accuracy(%)	Part Accuracy(%)
Percentage split (50% train, 50% test)	61.70	54.25	57.44
Percentage split (70% train, 30% test)	68.42	56.14	68.42
Percentage split (90% train, 10% test)	78.94	68.42	78.94

As illustrated in Figure 2, the highest accuracy was observed in the case of decision-tree induction algorithm (J48) which has the highest value for all three percentage splits (50%, 70 % and 90 %).
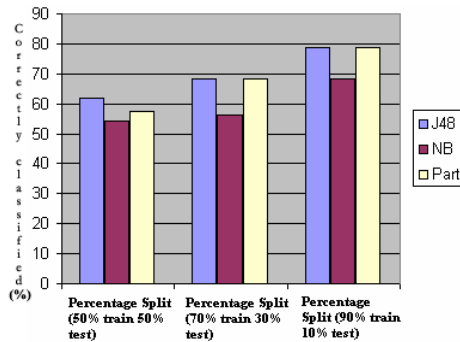
Fig.2. Comparing machine learning algorithms using percentage split

However when the split is 70 % and 90% Part algorithm's accuracy was equal to the accuracy of J48 algorithm. Despite the high accuracy rate of J48 and Part, the accuracy rate is unstable when the data is split into training and test, whereas Naïve Bayes shows stable accuracy for the same dataset. The accuracy rate of Naïve Bayes is the lowest among the three algorithms. This low accuracy was to be expected because the strong assumption that all the attributes are independent is unrealistic in our data. Let us mention that the type of nerve injury influences the type of repair.

4 Conclusion and Future work

In our study, three machine learning methods were applied with the purpose to predict the results of peripheral nerve surgery. The most accurate learning methods were evaluated.

The study showed that J48 and Part algorithms have the highest accuracy, while Naïve Bayes has the most stable changing rate. These results are very important in choosing the most accurate algorithm for the prediction of surgical results in future similar cases. This will enable the surgeons to predict surgical results in preoperative period according to the specific characteristics of the single patient.

In our future work we will try to train and test on larger and more diversified data sets (different surgeons and hospitals). The homogeneity of the type of nerve lesion might influence the level of accuracy; therefore we are interested to try the algorithms for the separate categories. We shall continue to experiment with other machine learning algorithms in order to increase the accuracy of the model.

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Designing a Distributed Shared Memory Many-Core Architecture for Reliable Space Applications

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Abstract. Taking into consideration space applications' demands for higher bandwidth and processing power, we propose to efficiently apply the upcoming many-core processors and other Commercial-Off-The-Shelf (COTS) products to improve the on-board processing power. A combination of traditional hardware and software-implemented fault-tolerant techniques, addresses the reliability of the system. This system aims to provide other very important features like flexibility, scalability and portability. First, we describe common requirements and design challenges of future space applications like the High Resolution Wide Swath Synthetic Aperture Radar (HRWS SAR). After proposing the High Performance Computing (HPC) architecture, we compare between most suitable hardware technologies and give some rough performance estimations based on their features. It turns out that a power-efficient, high performance and reliable architecture based on COTS products is needed to face current and especially future space missions' challenges.

Keywords: HRWS SAR, COTS, HPC, Many-core processors, Interconnect Fabric, Reliability, Redundancy, Replicated Services.

1 Introduction

Current space applications play a crucial role in our daily live in security and defence, observing and protecting the environment, in scientific and technical advances and in telecommunication utilities. Traditionally, they have been remote control platforms with all major decisions made by control centers on earth. In order to deal with high-reliability requirements and other constrains like power and size, the on-board computers offered minimal functionality. New space applications ask for improved on-board processing abilities, in terms of high processing power and throughput without losing the required reliability.

With the current space technology it's impossible to face such challenges, since the designer has to allocate resources for techniques dealing with radiation effects too. Some of the most disturbing radiation effects [1] on electronic equipments are:

1. Total Ionizing Dose (TID) is the cumulative long term ionizing damage due to protons and electrons.
2. Single Event Upset (SEU) is a bit-flip in a memory element caused by a change in the state of the transistor, when hit by an energetic particle.

3. Single Event Transient (SET) is a transient current pulse, generated when a charged particle hits a combinatorial block, and if this pulse propagates fast enough it can become SEU.
4. Single Event Latch-up (SEL) is the activation of new paths between the transistors, caused by a current spike. This path turns the circuit fully-ON causing a short connection and after that, the current might burn the device.

2 Motivation and Design Goals

In our study, we have selected the HRWS SAR application, as one with the highest requirements in the range of future space applications, since we want the proposed HPC architecture to be suitable also for other similar applications.

Current state of the art SAR systems typically use antennas with analog networks and one final phase centre. In such system, two top-level system parameters, swath-width and the azimuth resolution, are contradicting and cannot be improved at the same time. The HRWS concept overcomes these constraints by combining a high azimuth resolution with an improved swath-width and a continuous coverage [2]. The HRWS SAR system architecture requires two separated apertures for transmit and receive. The receive aperture is split into multiple sub-apertures in azimuth and elevation called panels and tiles. Each panel is subjected to an identical digital processing sequence. Each tile is the source of an analog signal. After ADC-sampling, the data of each tile is identically subjected to the so-called Scan-On-Receive channel processing. The processed data from each tile is then summed into a single data stream. This data stream is finally subjected to decimation and a compression algorithm before it is sent to the on-board memory for storage and subsequent down-linking. Further details on the HRWS SAR technology and baseline instruments can be found in [3]. For the reference receive aperture with 7 panels and 12 tiles each, the following computational challenges have to be faced:

Table 1. Sensor data rates

Instantaneous raw data rate/tile	8 Gbit/s
Average raw data rate per tile	7.2 Gbit/s
Average raw data rate per panel	86.2 Gbit/s
Full antenna average raw data rate	603.1 Gbit/s

Table 2. Processing power

Processing Power	Number of 16-bit fixed-point, complex, Multiply and Accumulate(MAC) operations
Per tile	17.4 (per 2ns clock tick)
Per panel	290 (per 2ns clock tick)
Instrument	2030 (per 2ns clock tick)
Total/s	$1.02*10^{15}$

To meet this kind of demands requires a computing architecture which can deliver high performance and memory bandwidth, while maintaining correct operation in the space environment. This environment impacts the functionality and sometimes the mission of the satellite itself. To provide a reliable architecture one might take into consideration the adoption of techniques in the fabrication process or in the design process. In the latter one, the architecture has to be supplemented with special hardware and software design techniques, which improve reliability by efficiently using the resources to keep the required level of performance. Such means would be Redundancy and Software Implemented Fault-Tolerance techniques.

In most previous and current work, designers trust only customised by fabrication components, like the LEON-2FT radiation-hardened processor [4]. This method turns out to be not so feasible when designing a satellite system, since it becomes too expensive for such a small market.

The distinguished feature of our HPC architecture, critical to achieving these goals, will be the use of many-core processors and other COTS products, which are cheaper and flexible in use. Symmetric and distributed shared-memory architectures combine a wide range of features to deliver, in a cost effective way, high processing power and reduced bandwidth demands on memory. Multi-core and many-core technologies offer new levels of energy efficient performance enabled by advanced parallel processing capabilities and by the number of cores integrated into a single package. Expected future technologies will be holding dozens or even hundreds of processor cores on a single die, offering unpredictable levels of performance.

Further, we propose the architecture based on many-core processors, as the only solution to cope with space exploration, space science and defence missions' challenges. To help system designers into further refining the components of the architecture, we give some rough performance estimations. We are currently working toward evaluation and testing of different COTS products with respect to the performance of the HRWS SAR application.

3   Overall System Architecture

As shown in Fig. 1, the HPC architecture will be composed of "N"-Parallel Processing Nodes (PPNs) and one Radiation Hardened Management Unit (RHMU). The dataflow will be from the instruments to the PPNs via I/O and digitizer components and from there through the backplane/interconnection and finally to the ground via the satellite communication subsystem.

Fig. 2 illustrates the PPN composed of "M"- I/O components, a Many-Core Processor (MCP), a memory associated with the MCP, the local bus and the bus interfacing component. In order to provide modularity and scalability features, each PPN has to be integrated in a separated card. This will also help to reduce thermal issues by avoiding concentrated heat.
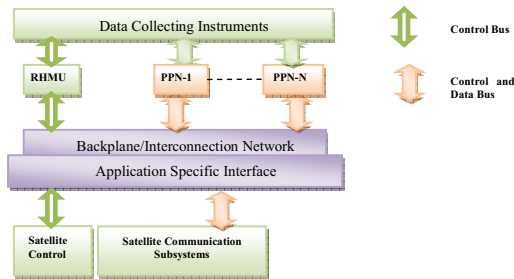
Fig. 1. HPC Architecture for space applications

The I/O components will be used only to input and output data needed from the application and not for control data. A local PCI Express bus will be used especially for the communication between the I/O components and the MCP. A separated module has to be used to interface the local PCI Express bus to a backplane bus or to a packed switched fabric. Memory components with high bandwidth and enough capacity might be needed, to store the buffered temporal data as well as to provide a shared communication environment for the threads executing on different MCPs.
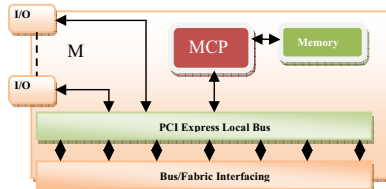
Fig. 2. The Parallel Processing Node

The proposed distributed shared memory architecture will scale the memory bandwidth by having most of the accesses to the local memory, and will keep the latency to access the memory low compared to a symmetric shared memory approach. The separated memories will be addressed as one logically shared address space, which will serve also as a communication environment for the distributed many-core processors. An Application Specific Interface (ASI) will be needed to connect the HPC architecture with the other subsystems of the satellite. By making the ASI an independent component one can reduce the impact of porting the HPC architecture to new communication subsystems and missions. If needed, a low bandwidth and low latency bus can be used to connect the RHMU with PPNs and with the satellite control subsystem.

3.1 A hybrid Fault-Tolerant System

To protect the architecture, especially from upsets, we propose to apply a combination of hardware and software techniques. Some components of the architecture have to be radiation-hardened, to make sure that the critical parts stay reliable. The RHMU and the ASI should be radiation-hardened. One has to make sure that at the center of the RHMU stay a radiation-hardened processor [4] and memory modules in a Triple Modular Redundancy (TMR) fashion.

The best way to improve reliability via software techniques would be to integrate a fault-tolerant middleware between the operating system and the application software. This middleware will be coordinating with fault-tolerant functions used by the application designer. An overview of the software architecture stack, its partitioning and mapping onto the hardware is shown in Fig. 3. This solution will offer mainly Single Event Effects (SEE=SEU+SET) tolerance through software implementations.
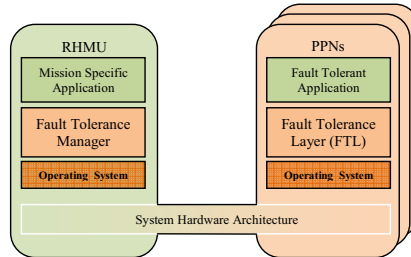
Fig. 3. Software architecture stack

The Fault-Tolerance Manager (FTM), hosted on the RHMU, should be responsible not only for management activities related to fault recovery, but also for other management tasks related to the mission and application tasks or services. The Fault-Tolerance Layers (FTL), hosted on each PPN should be responsible for fault detection and report, but they might also include local management services. Both of these middleware layers should be isolated, via Application Programming Interfaces (APIs). This will make the services of the FTM and FTL available for future missions and applications, improving so system's portability.

3.2 Replication Services

In Triple Modular Redundancy (TMR), if two or more results agree, that result is taken as correct, otherwise an uncorrectable fault has been observed and additional action is needed. TMR technique offers an easier way to detect errors, but it makes no efficient use of the resources. Traditionally the TMR technique was used at the hardware level by replicating the hardware resources, but this proves to have high costs.

Process-level replication is a software technique, in which multiple identical processes can be instantiated (multi-threaded) on same or different processing resources and their results compared for consistency. Some other replication techniques are diversity oriented, i.e. hardware and software elements are not copied, reproducing redundant errors, but are independently designed to fulfill the same function through implementations based on different technologies.

Redundant multi-threading alternatives, suitable for the PPN-Level of our system, are evaluated in [5]. Another solution to the tradeoff between performance and reliability might be to implement a rotating consistency check, in which only some processes are replicated and results checked for consistency at a time, but over a longer period all of them get verified. Fig. 4 illustrates a combination of the rotating redundancy with the Chip-level Redundant Threading (CRT) technique [5].
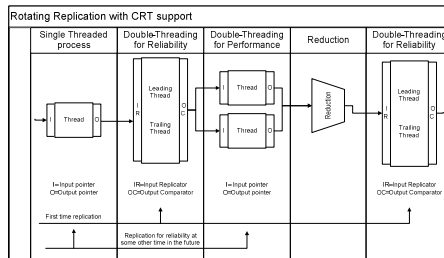
Fig. 4. Rotating Redundant Threading

4 Performance Estimation of HRWS SAR on HPC Architecture

To deal with 603.1 Gbit/s of raw data rate and processing power of 1 Tera 16-bit complex operations per second, we propose to partition the system at the panel level. Since the receive aperture is divided into 7 panels, it would be feasible to think of 7 independent PPNs with an average raw data rate of 86.2Gbit/s and a minimum processing power of 145G 16-bit complex operations per second. Fig. 5 illustrates the maximum bandwidths supported by the best interconnection candidates.
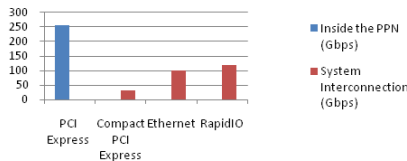
Fig. 5. Bandwidth illustration

Based on this and other features related to the system reliability, we propose to use PCI Express as an interconnection bus inside PPNs and RHMU, RapidIO as an interconnection fabric between the components of the whole system.

In PCI Express [6], reliability has been enhanced by way of error detection and signal integrity. Signal integrity is improved by utilizing differential pairs for signal lines with greater noise immunity than a fast speed parallel bus. Another way to improve the reliability might be to build a fully redundant system by implementing a dual star topology as the one proposed in [7].

RapidIO [8] implements packed-switched point-to-point interconnects, allowing multiply full-bandwidth links to be simultaneously established between the nodes in the network. By using multiply switches in the system, topologies consisting of hundreds or thousands of nodes can be achieved. RapidIO interfaces are based on LVDS technology and can achieve bandwidths of up to 60 Gbit/s for each active link. A 16 bit RapidIO system with two active point-to-point links is capable to transmit 120 Gbit/s.

To deal with the processing power requirements the best candidates are the many-core processors. The selection of the many-core processor should be based mainly on the performance, memory and I/O throughput, cost and manufacturing process. One such processor is the Accelerated Processing Unit (APU) codenamed Lliano [9], which according to AMD will be released in 2011. Tab. 3 summarizes the performance estimations taken into account when proposing the Lliano processor as the best candidate for the architecture. Lliano APU will be integrating four x86 CPUs and one GPU on the same silicon die. The APU will be manufactured using a 32 nm Silicon on Insulator (SOI) process and will provide integrated DDR3 memory controllers and error correction support in the L2 cache. These features make it even more interesting for our satellite computing architecture.

Table 3. Lliano AMD Fusion Processor Features

Processing Unit	Lliano Processor	
	Phenom II Quad Core	Radeon HD 4550
Operating Frequency	3 GHz	650 MHz
Power Consumption	25 W	19W
Processing Power	42.83 GIPS, 34.81 GFLOPS	104 GFLOPS
	138 GFLOPS	
Number of Processing Units needed at the Panel Level	2 units (145 GOPS required)	
Number of Processing Units needed in total at the System Level	14 Units (1TOPS required)	

5 Summary and Conclusions

Current and especially future space applications present significant challenges to space system designers. Traditional methods and architectures cannot deal with requirements that space applications like HRWS SAR present. The proposals in this

paper address the essential aspects that should be taken into account when designing high performance architectures for space applications and missions of the next generation. The novelty stays in the combining of many-core processors and other COTS products with radiation-hardened specific components, to improve performance without losing the system reliability. Further tests and evaluations have to be done in the specific fields of space applications that would need such architecture. Obvious benefits would be:

- A speedup by a factor of 10 to 100 of the currently available computational power in space, enabling unpredictable amounts of science data and autonomy processing.
- Improved reliability and robustness of the system.
- Efficient and faster application development via already familiar programming models.
- Ability to port applications directly to the space environment.
- Minimization of the non-recurring development time and costs for future missions.
- Efficient, flexible and portable software fault-tolerance techniques that can be applied in the space environment.
- Portability to future advances in hardware and software technology.

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Statistical Methods for EEG Data Analysis of Healthy and Epileptic Patients

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Abstract. In this work, an attempt is made to present a methodology for the comparison of a healthy to an epileptic patient and the determination of waveform characteristics that could be related to pre-ictal and ictal epileptic stages. The primary analysis steps involve data filtering, artifact rejection and Independent Component Analysis (ICA) methodology for isolation of the components, which contribute the most to brain activity at certain frequency areas. Spectral analysis is carried out using the Fast Fourier Transform and the Bretthorst Periodogram, widely utilized in Bayesian Data Analysis. All the above methods are developed in Matlab environment in the form of script files. An open-source Matlab Toolbox named EEGLAB is also used for the artifacts removal and Independent Components realization. The combination of ICA methodology with Periodogram Analysis isolates the components that contribute to the epileptic activity and identifies the oscillations responsible for the abnormal waveforms. Even in the presence of a noisy spectrum, peaks of the highest intensities are observed and analyzed.

Keywords: EEG, Epilepsy, ICA, Spectral Analysis, Bretthorst Periodograms

1 Introduction

The study and analysis of the human brain activity is proved to be valuable for the understanding and detection of various neurological diseases, such as epilepsy. Differences between a healthy and an epileptic brain, if investigated properly, might lead to a prospective seizure prediction [1] and thus improve a patient's daily life. For this purpose, electroencephalography or EEG has been widely utilized in neuroscience.

Statistical Methods for EEG Data Analysis of Healthy and Epileptic Patients

EEG is the recording of the electrical brain waves by electrodes placed on specific positions on the scalp[1]. The EEG spectrum contains some characteristic waveforms or oscillations which fall within four different frequency bands: δ (0.5–3.5 Hz), θ (4–7.5 Hz), α (8–12 Hz), and β (13–30 Hz). There exist many areas of interest in EEG analysis, such as the identification of oscillations, the efficient removal of external artifacts that conflict with the brain activity, the significance of the channel type related to the electrode position in recorded activity and the classification of healthy and unhealthy patients based on characteristics arising from their spectral differences. Extracting features and patterns from the spectrum can be easily performed by the use of time-domain, frequency-domain or more advanced time-frequency-domain techniques [1,2].

Dumermuth, Molinari, Welch and many others [3,4] have widely used the Fast Fourier Transform, FFT, for the estimation of the EEG power spectrum. Many researchers such as Weng, Khorosani, Petrosian and others [5], have utilized the neural networks methodology for this purpose, while Hazarika et al [6] propose the more elegant, wavelet transform. Kannathal, Diambra [7] and others employ proper entropy algorithms. Papers including more complicated frequency transforms, ARMA models, chaotic time-series analysis, cluster analysis and so on, show that EEG analysis remains an open and antagonistic field between doctors, mathematicians and computer scientists.

In this work, a comparison between the Schuster and the Bretthorst periodogram [8] for the EEG spectrum analysis is proposed. The data is pre-processed in EEGLAB for the removal of artifacts such as eye blinks, eye movements, muscle activation, cardiac artifacts and the characteristic noise of 'mains hum'. EEGLAB offers a variety of tools for data filtering such as the Independent Component Analysis, ICA [9]. After the data cleaning, the two periodograms are examined for characteristic oscillations or spikes and an attempt is made to connect these features with the epilepsy pre-ictal and ictal stages.

2 Materials and Methods

2.1 Data Acquisition

The analyzed data refer to a healthy subject and an epileptic one. The healthy's spectrum is obtained with a sampling rate of 500 Hz and the total matrix for analysis is 32 channels x 900000 recordings. The epileptic patient's spectrum has a sampling rate of 256 Hz and the matrix to analyze is 19 channels x 308404 recordings. It should be noted that the second patient has been diagnosed with idiopathic generalized epilepsy with tonic-clonic seizures. The subject is a female adult and is treated with sodium valproate.

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[1] The placement of the electrodes follows the standard arrangement of the 10-20 system.

2.2 Methods

Independent Component Analysis (ICA)

The concept of EEG data analysis into independent components lies in the fact that there exists a statistical dependence between the various channels where the brain signal is recorded, due to internal or external correlations. Thus, in order to draw safe conclusions regarding the nature of the observed oscillations in the EEG spectrum, the main statistically independent components need to be isolated.

ICA methodology, originally applied by Makeig et al in 1996, is sufficiently explained in [9]. Basically, it is a statistical and computational technique for revealing hidden factors that underlie sets of random variables, measurements, or signals and is related to Principal Component Analysis and Factor Analysis. Its main concept is the blind separation of a given data matrix X into a resulting matrix where the time courses U are maximally independent (maximize the joint entropy among the data projections or minimize their mutual information). This is performed with the use of a proper weight matrix W.

$$U = WX \text{ or } X = W^{-1}U \ . \tag{1}$$

After calculating ICA components, one can proceed to their acceptance or removal according to whether they represent pure and/or mixed cortical signal sources or artifacts. ICA can be applied through the toolbox and graphical user interface EEGLAB [10], in MATLAB environment (The Mathworks, Inc.). Before using it one must ensure that the following conditions are met [9,11]: 1) The data must contain enough points for the temporal independence of the underlying sources to be expressed, 2) No electrode activity should be a linear mixture of other activities, 3) Each data source must remain spatially stationary throughout the training data and 4) The distributions of the data sources cannot be Gaussian.

Schuster Periodogram

The Discrete Fourier Transform is one of the most powerful tools in signal analysis and thoroughly used for the study of physical systems. The Periodogram was introduced by Schuster, as a method of detecting periodicities and estimating their frequencies. For obtaining the power spectrum of the EEG signal of the epileptic patient with the Fourier method, a proper frame length or sampling time was chosen as 256, which is a power of 2 (for computer efficiency reasons). In a data series of length N, each time element n is transformed in the frequency domain k according to equation (2) and the squared magnitude of the complex Fourier coefficients consists the Power Spectrum.

$$X(k) = \sum_{n=0}^{N-1} X(n) \exp(\frac{-2\pi i}{N} kn) \ . \tag{2}$$

Unfortunately, the Discrete Fourier Transform will provide accurate frequency estimates only when the following conditions are met [8]: 1) the length of the data series N is sufficiently large, 2) the data series is stationary, 3) there is no evidence of low frequency existence, 4) the data contain one stationary frequency, 5) the noise is white. When one or more of the above conditions is violated one can use the Bretthorst Periodogram, based on Bayesian Analysis.

Bretthorst Periodogram

Bayesian Probability Theory defines a probability of occurrence as a reasonable degree of belief, given some prior information of the data. In our example the probability distribution of a frequency of oscillation ω is computed conditional on the data D and the prior information I, abbreviated as the posterior probability P(ω|D,I). To calculate this one must find the direct probability (or likelihood function) P(D|ω,I), the prior probability P(ω|I), the probability P(D|I) (in parameter estimation problems it is a simple normalization constant) and eliminate the nuisance parameters. The methodology of the above calculations, described analytically in [8], finally results to the well-known t-student distribution presented in equation (4), where C(ω) are the complex Fourier Coefficients and N the data series length comprised of d_i elements.

$$P(\omega \,|\, D, I) = \frac{P(D \,|\, \omega, I) \cdot P(\omega \,|\, I)}{P(D \,|\, I)} \; . \tag{3}$$

$$P(\omega \,|\, D, I) \propto (1 - \frac{2 \cdot C(\omega)}{N \cdot \overline{d^2}})^{\frac{2-N}{2}} \,, \qquad \overline{d^2} = \frac{1}{N} \sum_{i=1}^{N} d_i^2 \; . \tag{4}$$

The calculated posterior probability is indicative of the most dominant oscillations in the examined signal, presented as single spikes in the power spectrum, whereas the rest of the information is suppressed due to the nature of the algorithm.

3   Results and Discussion

The dataset of the epileptic patient was imported in EEGLAB and an appropriate channels.loc file was constructed in order to respect the channels ordering appearing in the source file. A "Remove Baseline" and a "Basic FIR Filter" in the range 0.5-45 Hz were applied in order to remove possible technical errors.

Afterwards, ICA methodology was applied to the data and components not connected to cortical activities have been recognized and removed. The criteria of the above selection were the following: the activity spectrum is smoothly decreasing (eye movement artifacts), the topography is concentrated on the frontal part of the head (eye blinks) and the topographies are centered on single electrodes (muscle tension artifacts). From the remaining 14 ICs some are indicative of the patient's illness and some just contain information of the brain normal activity (α waves). A comparison between fig. (1a) and fig. (1b) shows the differences in the spectrum of an epileptic

and a healthy subject. It should be noted that 2 components from the healthy subject were removed, as one of them represents eye artifacts and the other one, muscle activity.

The healthy subject's spectrum is smoothly decreasing and a broadened maximum around 10 Hz (normal brain activity, alpha waves) is observed. On the contrary, the epileptic's spectrum is divided into two areas. Four of the independent components exhibit the highest power intensities and really wavy spectrums. The maximum of 10 Hz is no longer very easy to observe because of the irregular brain activity that obscures it. The rest of the components have decreasing power as frequency increases and resemble to the healthy subject's spectrum.
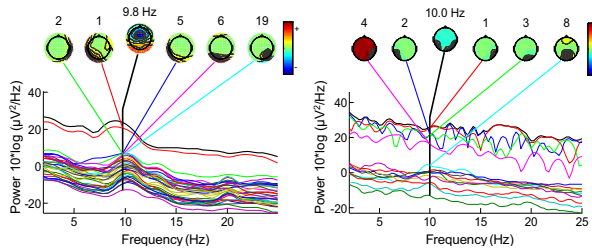
Fig. 1. a) 30 ICs maps (out of 32 channels) of a healthy patient and b) 14 ICs (out of 19 channels) of an epileptic one.

The ICs 1, 2, 3 and 4 that exhibit the highest power activity are presented separately in fig. (2). The challenging part, which will be presented in future work, is to try to group the different spikes of these 4 components into clusters and thus find patterns that would be characteristic of the various stages in an epileptic seizure.
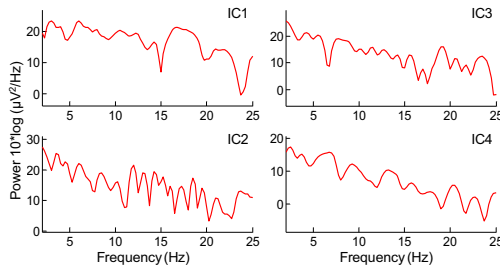
Fig. 2. Different kinds of spikes and peaks in IC1, IC2, IC3 and IC4 spectra.

We continue by exporting the 14 ICs as a .mat file for further use in Matlab environment. An appropriate script was written in order to compare information obtained from Schuster Periodograms and Bretthorst Periodograms. Fig. (3) presents

the Schuster Periodograms of the components [11,12] with the highest intensities in the area of interest, 0-12 Hz.
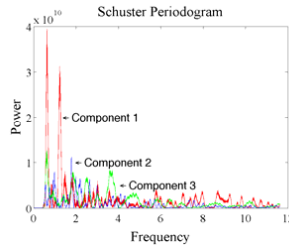
Fig. 3. Schuster Periodograms of the first three Independent Components, showing high intensities at low frequencies. The highest power activity is located in the frequency area of the delta waves.

Clearly, the two red peaks of the first IC are indicative of the strongest oscillations in the whole spectra and are identified in the area of delta waves, whereas other peaks of smallest intensity but yet significant ones are extended into the theta waves area. It should be noted that waveforms observed in the range 0-7Hz are classified as abnormal in awake adults, such as in the case of the patient's spectra in our work.

By drawing the power spectra of the first two ICs in a log-log scale, the delta peaks around 1 Hz can be easily recognized and a transition between lower power intensity states to higher ones can be observed, as demonstrated in fig. (4).
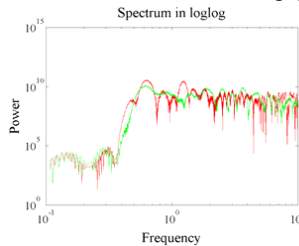
Fig. 4. Power spectra of the first IC (red) and the second IC (green) in a logarithmic scale.

The above results are compared to those from the Bretthorst method. Below selected ICs are presented along with their FFT spectra, in the frequency areas where the highest activity is observed. The notation 'peak' is used for the classical Schuster Periodogram whereas 'spike' is used for the alternative Bretthorst Periodogram.

The observed spikes in the Bretthorst periodograms represent the highest brain activity recorded in each component. The method cannot only give a better resolution than FFT (many Bretthorst spikes appear as a single peak in FFT spectrum) but it can also identify the most important activity even in the presence of a noisy spectrum,

such as in fig. (5d). The components were examined and the following conclusions were drawn. Most of the activity was gathered between 0.5-2 Hz (delta waves) and extended (in IC4 and IC11) between 3-5 Hz (theta waves). It should be noted that the IC8 though extremely noisy reveals spikes around 9-11 Hz, where the normal alpha waves activity is located. IC8 was the only component where alpha waves could be so easily distinguished. In IC6 and IC9 little 10Hz activity could also be faintly observed but once again the delta waves dominated the spectrum.

a) IC1 (two peaks / four spikes)

b) IC2 (one peak / multiple spikes)

c) IC3 (one peak / two spikes)

d) IC8 (noise / multiple distinct spikes)
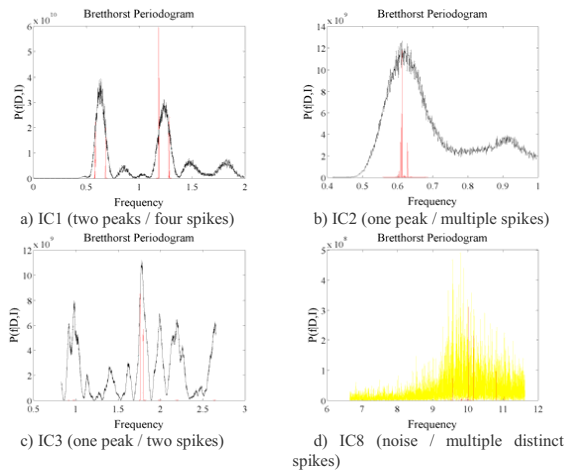
Fig. 5. The Bretthorst Periodograms of selected ICs, showing as red spikes and compared to the corresponding Schuster Periodograms.

4 Summary

In this work, we have presented methods for isolating and characterizing epileptic activity. The data were filtered and decorrelated by using Independent Component Analysis and the ICs, which contain brain activity information, were analyzed in the frequency domain. Schuster and Bretthorst Periodograms have been compared and the frequency areas containing the highest brain activity were identified. Sharp delta waves found in almost all the Independent Components, give evidence of epileptic activity.

Future work will include the use of clustering algorithms using data from a number of epileptic patients with criteria such as the form of the peaks or perhaps the intensity of the spikes, in an attempt to connect the clusters to the various epileptic stages and

the different kinds of epileptic cases. More specifically, the data of 21 epileptic patients from the Epilepsy Center of the University Hospital of Freiburg [13], will be analyzed and direct conclusions from these comparisons will be extracted. This will contribute to the currently unresolved issue of accurately defining the pre-ictal period and separating it from an inter-ictal one.

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Prion Neural Systems: Synaptic Level

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Abstract. The need of designing a more realistic model of a dynamic system that exhibits a continuous dynamic behavior from the lowest level of the system (individual neuron units) to the highest one (entire CNS) comes from biological hypothesis about the functionality of certain subsystems of the nervous system. What is expected to have major impact on the future of biological, medical and information processing areas, in the same time, is the implementation, at a molecular level, of a neuron device model viewed as a *feedback control system*.

1   Introduction

In this paper we present our work as part of an ambitious project to build models of complex systems in a bottom up approach starting from the molecular level and moving seven levels up to the central nervous system level (molecular, synaptic, neuron, networks, maps, systems and the central nervous system level). *The prion neural hybrid dynamic system* drove us to a very fruitful interdisciplinary interplay (that combine neural networks, brain calculi or membrane computing under the framework of DNA computing into a new abstract model) for encompassing a larger class of systems within the system structure, allowing for more flexibility in modeling a dynamic biological phenomena that was already introduced in [8]. The significance of our approach arises from the fact that using only one of the directions that we already know was not enough for abstracting a computing model from the structure and the functioning of a living neuron as an evolutionary multi-functional computing system working as a sequential machine at the level of each neuron unit, but in parallel at the level of its systems and, in the same time, its neuroarhitecture and functionality being directly dependent on the anatomical and functional metabolism of each neuronal unit of the assembly (for more informations see [8]). This is why the neural-like system structure is modeled as a parallel distributed communication network of networks of neurons, which relies on both local (between neurons) and global interactions (between networks or neurons of different networks). As one neuron device is viewed as a system for information processing offering objects (playing the role of biological protein molecules) as a support for computational processes that transforms the input signal into an output signal following the tradition of neural networks (read [4], [5], [6], [10] and [11] for specific details), one network is designed by placing a finite set of neurons in the nodes of a finite

directed graph (see [9]). The set of directed links between neurons in this graph are called *synapses*, their basic role being that of neural communication. The vision over this paper comes from biology as not any neuron can bind to any other neuron. This is why we focused on the need to model the binding affinities between neurons which depend on sufficient quantities of the corresponding substrates, and the compatibilities between the type of the transmitters (specific "protein" objects in the pre-synaptic neurons) and receptor types (specific "protein" objects of the post-synaptic neurons) (to be seen [1], [2], [3]). To each pair of neuron devices that bind to each other a binding affinity degree is assigned. Potential changes of these degrees can occur inducing modified synaptic communications determining the neuron to adapt to its inputs. This neuron ability to adapt to its inputs models its behavior directly influenced by a set of chemical reactions (organized into metabolic pathways, in which one chemical is transformed into another by sequences of enzymes - [2]) that occur in living neuron in order to maintain life. In normal conditions, these processes allow the neuron to maintain its normal structure and to respond to its environment. This new state is memorized into the DNA of that neuron ([7], [12]) leading to a learning process at the molecular level and thus defining the neuron device as a *feedback control system*. Precisely this synaptic level is designed within the pages of this paper.

2   Prion Neural System: Synaptic Level

The neuron device, view as a system for information processing (see [1] for more explanations), offers objects - playing the role of biological protein molecules - as a support for computational processes that transforms the input signal into an output signal. In order to model the neuron behavior, we make the observation that not any neuron can bind to any other neuron ([2], [3]). This fact will give us the possibility of designing (at the system level) specific pathways for fulfilling specific task functions.

2.1   Modeling the binding affinities

To illustrate the possibility of synaptic formation for any pair of neurons within a network structure of the system, we choose to model the binding affinities between any two neurons n_i, n_j in N. Hence, we also consider

- OC_{n_i} the set of all classes of organic compounds/organic complexes for the neuron n_i and OC_{n_j} the set of all classes of organic compounds/organic complexes for the neuron n_j $(OC_{n_i} \cap OC_{n_j} \neq \emptyset)$

- $OC_{nt} \subset OC_{n_i}$ the set of all neurotransmitters for n_i and $OC_r \subset OC_{n_j}$ the set of all receptors for n_j

- L a finite set of labels over the English alphabet.

We define the labeling function of each organic compound/organic complex as $l : OC_n \rightarrow L$. As $OC_{nt} \subset OC_{n_i}$ and $OC_r \subset OC_{n_j}$ we denote $T_r = l(OC_{nt}) \subseteq 2^L$ a set of labels of all neurotransmitters for n_i and $R = l(OC_r) \subseteq 2^L$ a set of labels

of all receptors for n_j. We also recall that by $a_i^{m_i}$, with $a_i \in OC_n$ and $m_i \in \mathbb{N}$, represents that the quantity of a_i into the substrate is m_i. For all $a_i \in OC_n$ and m_i its multiplicity, we define

- the *quantity found into the substrate (of neuron n) of one organic compound/organic complex* a_i at the computational time $t, t \in T$ (the set T of discrete times is defined as $T = \{i \cdot \mu | i \in \mathbb{N}, \mu = \frac{1}{k}, k \in \mathbb{N}^* fixed\}$) is a function $C_n : T \times OC_n \to \mathbb{N} \cup \{*\}$, defined by

$$C_n(t, a_i) = \begin{cases} m_i, & \text{if } m_i \text{ represents the number of copies of } a_i \text{ into the substrate} \\ & \text{(or environment)} \\ *, & \text{if there is an arbitrary finite number of copies of } a_i \text{ into the} \\ & \text{substrate (or environment)} \end{cases}$$

- the *quantity of substrate*, at the computational time $t, t \in T$ as

$$C_n(t) = C_n(t, a_1) + C_n(t, a_2) + \ldots = \sum_i C_n(t, a_i) = \sum_i m_i$$

The *binding affinity* depends on a sufficient quantity of substrate and the compatibility between the type of transmitter and receptor type.

The *sufficient quantity of substrate* is a fair ratio admitted (r) between the number of neurotransmitters released by n_i into the synapse and the number of receptors of the receiver neuron n_j. Without restraining generality, we consider the sufficient quantity of substrate as a boolean function of the assessment ratio evaluation. For $trans \in T_r$ with m its multiplicity and $rec \in R$ with n its multiplicity, we define $q : T_r \times R \to \{0, 1\}$,

$$q(trans, rec) = \begin{cases} 0 & \text{if } m/n \neq r \\ 1 & \text{if } m/n = r \end{cases}$$

The *compatibility function* is a surjective function $\mathcal{C} : T_r \times R \to \{0, 1\}$ such as for any $trans \in T_r$ and any $rec \in R$,

$$\mathcal{C}(trans, rec) = \begin{cases} 0 & \text{if } trans \text{ and } rec \text{ are incompatible} \\ 1 & \text{otherwise} \end{cases}$$

The *binding affinity function* models the connexion affinities between neurons by mapping an affinity degree to each possible synapse. We consider $W \subset \mathbb{N}$ the set of all affinity degrees that we will refer to as synapses weights,

$$W = \{w_{ij} | w_{ij} \in \mathbb{N}, \forall i, j \in \{1, 2, \ldots, |N|\}, n_i, n_j \in N\}$$

If $w_{ij} = 0$ then there is no connection between neurons n_i and n_j (there is no $syn_{ij} \in Syn$). Otherwise, there is a connection between n_i and n_j (there is $syn_{ij} \in Syn$) with the binding degree $w_{ij} = w, w \in \mathbb{N}, w_{ij} \neq 0$. For any $n_i, n_j \in N$, $trans \in T_r$ (the transmitters type of neuron n_i), $rec \in R$ (the receptors type in neuron n_j), $\mathcal{C}(trans, rec) = x$ with $x \in \{0, 1\}$ and $q(trans, rec) = y$ with $y \in \{0, 1\}$, we design the binding affinity function as a function

$$A_f : (N \times N) \times (T_r \times R) \times \mathcal{C}(T_r \times R) \times q(T_r \times R) \to W$$

where

$$A_f\left((n_i, n_j), (trans, rec), x, y\right) = \begin{cases} 0, \text{ if } x = \mathcal{C}\left(trans, rec\right) = 0, \forall y \in \{0, 1\} \\ 0, \text{ if } (x = \mathcal{C}\left(trans, rec\right) = 1) \wedge \\ \qquad (y = q(trans, rec) = 0) \\ w_{ij}, \text{ if } (x = \mathcal{C}\left(trans, rec\right) = 1) \wedge \\ \qquad (y = q\left(trans, rec\right) = 1) \wedge (w_{ij} \neq 0) \end{cases}$$

Theorem 1. (The binding affinity theorem.) *For $P_i \in P_{b_{n_i}}$ a finite set of biochemical processes of neuron n_i by which it produces a multiset of neurotransmitters trans (trans $\in T_r$), at the computational time t ($t \in T$), and for $P_j \in P_{b_{n_j}}$ a finite set of biochemical processes of neuron n_j by which it produces a multiset of receptors rec (at the same time t of neuron n_i, rec $\in R$), we say that there is a synapse between n_i and n_j with the weight w_{ij} ($w_{ij} \neq 0$) if and only if there is $w_{ij} \in W^*$ such as $A_f\left((n_i, n_j), (trans, rec), 1, 1\right) = w_{ij}$*

Proof. Immediately from the definition of the binding affinity function. □

Corollary 1. *A prion neural-like system structure[1] is as a parallel distributed communication network of neurons placed in the nodes of a finite directed graph $N_s = (N, Syn)$ where N is a finite set of neurons and Syn defines a finite set of directed links called synapses, $Syn \subseteq N \times N$ a binary relation, such as*

$$Syn = \{syn_{ij} = (n_i, n_j) \,|\, n_i, n_j \in N, i \neq j, i, j \in \{1, \ldots, card\,(N)\},$$

$$A_f\left((n_i, n_j), (trans, rec), 1, 1\right) = w_{ij}, w_{ij} \in W^*\}$$

If instead of n_i we have e then the synapse (e, n_j) represents the directed link from the environment to the neuron n_j, respectively, if instead of n_j we have e then the synapse (n_i, e) represents the directed link from the neuron n_i to the environment.

Proof. Immediately from the construction of the neural-like system structure (for more details it is recommended to be seen [8]) and the binding affinity theorem. □

Example 1. We will take a simple example in which we consider only one transmitter type and one receptor type of each neuron (although far distant from the biological reality) at the (discrete) time $t, t \in T$, considered as the moment of synaptic formation between neurons in this example. We make the observation that at a later moment in time new synapses may be formed if certain conditions will be fulfilled. Let's consider the set of neurons $N = \{n_1, n_2, n_3\}$ and

- for neuron n_1: $OC_{nt_1} = \{a | C_{n_1}(t, a) = m_1\} \subset OC_{n_1}$ the set of neurotransmitters type and $OC_{r_1} = \{x | C_{n_1}(t, x) = p_1\} \subset OC_{n_1}$ the set of receivers type

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[1] The molecular level of a prion neural system was fully described in [8], along with the biological inspired phenomena that stands up as the starting idea of the system model.

– for neuron n_2: $OC_{nt_2} = \{b|C_{n_2}(t,b) = m_2\} \subset OC_{n_2}$ the set of neurotransmitters type and $OC_{r_2} = \{y|C_{n_2}(t,y) = p_2\} \subset OC_{n_2}$ the set of receivers type
– for neuron n_3: $OC_{nt_3} = \{c|C_{n_3}(t,c) = m_3\} \subset OC_{n_3}$ the set of neurotransmitters type and $OC_{r_3} = \{z|C_{n_3}(t,z) = p_3\} \subset OC_{n_3}$ the set of receivers type with $m_1, m_2, m_3, p_1, p_2, p_3 \in \mathbb{N}$.

We also consider the mappings $l_i : OC_{n_i} \rightarrow L$ with $T_{r_i} = l_i(OC_{nt_i})$ and $R_i = l_i(OC_{r_i})$ for all $i \in \{1,2,3\}$ such as the elements $trans_i$ are labels in T_{r_i} and the elements rec_i are labels in R_i. If r_1, r_2 are two ratios admitted such as $q(trans_2, rec_1) = 1$ (so $m_2/p_1 = r_1$) and $q(trans_3, rec_1) = 1$ (so $m_3/p_1 = r_2$) and if $\mathcal{C}(trans_2, rec_1) = 1$, $\mathcal{C}(trans_3, rec_1) = 1$, $\mathcal{C}(trans_3, rec_2) = 0$ and $\mathcal{C}(trans_2, rec_3) = 0$ then

– $A_f((n_2, n_3), (trans_2, rec_3), 0, y) = 0$ and $A_f((n_3, n_2), (trans_3, rec_2), 0, y) = 0$, for all $y \in \{0,1\}$, leading to the impossibility of any existence of any bound between neurons n_2 and n_3, nether at time t nor at any further moment in time, coming from the incompatibility of the two neurons in creating a synapse between them as long as they produce the same pairs of neurotransmitters and receivers as those produced at time t. We say that there is no syn_{ij} for $i, j \in \{2,3\}$, $i \neq j$.
– there is $w_{21} \in \mathbb{N}$ such as $A_f((n_2, n_1), (trans_2, rec_1), 1, 1) = w_{21}$ ($w_{21} \neq 0$). We say that there is the synapse syn_{21} between neurons n_2 and n_1.
– there is $w_{31} \in \mathbb{N}$ such as $A_f((n_3, n_1), (trans_3, rec_1), 1, 1) = w_{31}$ ($w_{31} \neq 0$). We say that there is the synapse syn_{31} between neurons n_3 and n_1.

We make the obvious observation that $r_1 \neq r_2$. Otherwise, if $r_1 = r_2$, then (because $r_1 = m_2/p_1$ and $r_2 = m_3/p_1$) $m_2 = m_3$, meaning that both neurons n_2 and n_3 have the same type of transmitters ($trans_2 = trans_3$).
Finally, we obtain the set of synapses $Syn = \{syn_{21}, syn_{31}\}$. This way the new neural system structure $N_s = (N, Syn)$ is formed.

$\square$

2.2 Modeling the neuron behavior

There is an internal timing that sets up the neuron activity rate characterized by an intracellular feedback-loop. This timing is measured between consecutive activations of groups of genes. On activation, the expression of a group of genes encode proteins after which they will be turned off until the next activation. The internal timing that sets the neuron activity rate must not be confound with the computational timing which represents the time unit for both internal processing and external electrical exchanges of spikes between neurons (one may say that the computational timing may be the "real time"; molecular timescale is measured in picoseconds (10^{-12}s), on such timescales chemical bonds being forged or broken and, this way, the physical process of "life" develops). Neuron's ability to adapt to its inputs by altering gene expression is defined as *a process of*

learning at a molecular level. We will next model the neuron device as a *feedback control system*.

We define the computational timing $T = \left\{ i \cdot \mu | i \in \mathbb{N}, \mu = \frac{1}{k}, k \in \mathbb{N}^* fixed \right\}$ and the internal timing that sets up the neuron activity rate $T_{nR} = \{ T_k | k \in \mathbb{N}, T_k \overset{notation}{=} t_i, i \in \mathbb{N}, t_i \in T$, where T_k represents the moment of a gene (group of genes) activation$\}$, $T_{nR} \subset T$. For a better understanding we choose the fallowing example: we suppose that corresponding to the computational time $t_i, i \in \mathbb{N}$, in parallel we deal with an activation of a gene (group of genes) expression at time T_k ($T_k \overset{notation}{=} t_i$) and then the gene (group of genes) is turned off at $t_{i+p}, 0 < p < j, p, j \in \mathbb{N}$. It is possible that not only one computation may take place until the next activation of a gene (group of genes), not necessarily the same one(s) at T_{k+1} ($T_{k+1} \overset{notation}{=} t_j$). We make the assumption that in the discrete time interval $[T_k, T_{k+1}]$ the neuron device computes starting from t_i to t_j ($t_i, t_{i+1}, \dots t_j$). This can be illustrated in **Figure 1**.
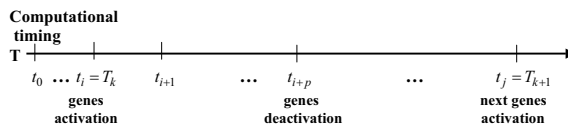
Fig. 1. Internal timing that sets the neuron activity rate is not the computational timing which represents the time unit for both internal processing and external electrical exchanges.

The transmitters action into the post-synaptic neurons are not dependent on their chemical nature but the properties of the receptors of the binding neurons. The receptors will determine the type of the synapse[2] and if the transfer

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[2] A synapse can be either excitatory, either inhibitory. An excitatory synapse is a synapse in which the spike in the presynaptic cell increases the probability of a spike occurring in the postsynaptic cell.

channels of the post-synaptic neurons are directly activated (the case of opening channels) or indirectly activated (the case of closing channels which initiate processes leading to internal neuronal changes).

In terms of our neuron device, we define the *neuron genome* as a memory register of the result of the previous information processing and the effect of events. The temporary memory of all informations of both the cellular and surrounding environment and the partially recording of the results of the previous computations are translated as DNA sequences. We have

- *genome*: totality of all genes encoders of genetic information contained in DNA (denoted G)

- *genetic information*: all information about the cellular and external environment

- *genetic code*: represented as a set of genes ($G = (g_1, \ldots g_k), k \in \mathbb{N}$) and the controllers of genes expression, a set of gene controllers ($c = (c_1, \ldots c_q), q \in \mathbb{N}$).

As at the activation, at time T_k, the expression of the gene g encode protein a after what it will be deactivated, for each controller $c \in OC_n$ there is a gene $g \in G$ such as we define the gene expression function in relation to the internal timing (T_k) as a function $Exp(T_k) : G \times OC_n \to OC_n \times OC_n \times \ldots OC_n$,

$$Exp(T_k)(g, c) = a^{var}$$

where $c \in OC_n$ is the controller of the g gene expression, a is the protein object that was produced and var its multiplicity, representing the quantity of a.

Remark 1. The expression of a gene in one specific moment in time, under the influence of a controller, encode only one protein (one gene controlled by a controller, at one moment in time, can encode only one protein).

Remark 2. One controller can influence the expression of a group of genes at different consecutive times (after the deactivation of a gene that encoded a protein at time T_k, the same controller can activate at time T_{k+1} another gene in the sequence of genes from that group).

Remark 3. At the same time, there are controllers that activate different genes, each one encoding different proteins (there is a set of genes that are activated in the same time T_k, each of them being under the influence of different controllers and encoding different proteins).

Properties of the gene expression in the case of indirectly activation, expressed as moments of T_1. $T_1 \in T_{nR}$ represents the time when a gene (group of genes) is activated and the expression of this gene (these genes) encode a protein (proteins).

1. At the time $T_1 \in T_{nR}$ (from the set of times that set the internal neuron activity rate), different controllers of different genes expressions lead to different results. Formally, for all $c_1 \neq c_2$ and for all $g_1 \neq g_2$, $Exp(T_1)(g_1, c_1) \neq Exp(T_1)(g_2, c_2)$.

2. Same gene expression controlled by two different controllers at different times, leads to different results. Formally, for all $c_1 \neq c_2$, for all $T_1, T_k \in T_{nR}, k \neq 1$ with $T_1 \neq T_k$ and for all g, $Exp(T_1)(g, c_1) \neq Exp(T_k)(g, c_2)$.

3. Different genes controlled by the same controller at different times, leads to different results. Formally, for all c and $T_1, T_k \in T_{nR}, k \neq 1$ with $T_1 \neq T_k$ and for all $g_1 \neq g_2$, $Exp(T_1)(g_1, c) \neq Exp(T_k)(g_2, c)$.

4. The gene expression controlled by the same controller at different consecutive times, leads to the same result. Formally, for all c and for all g, $Exp(T_1)(g, c) = Exp(T_2)(g, c)$.

5. For all c and for all g, if at the time T_1 we have $Exp(T_1)(g, c) = a^{var_1}$ and if at the time T_2 (such as $T_2 - T_1$ is a positive value, not necessarily $T_2 = T_1 + 1$) we have $Exp(T_2)(g, c) = b^{var_2}$ such as $a \neq b, var_1 \neq var_2$, then we say that the gene g *was mutated* (*underwent a genetic mutation*).

Let us make the assumption that

- at a previous time of T_1 (T_0), it was obtained a controller protein c which controls the expression of a gene $g \in G$, at time T_1, such as $Exp(T_1)(g, c) = a^{var_1}$ and

- for all $T_k, T_k - 1 > T_1$ (for $k \in \mathbb{N}, k > 1$), g does not suffer any genetic mutations.

We have that for all $T_j, T_1 \leq T_j < T_k - 1$,

$$C_n(T_j) = C_n(T_j, a) + \sum_{i, a_i \neq a} C_n(T_j, a_i) = var_1 + \sum_{i, a_i \neq a} C_n(T_j, a_i)$$

If, at time $T_k - 1$, g does suffer any genetic mutation, then $Exp(T_k)(g, c) = b^{var_2}$, and

$$C_n(T_k) = C_n(T_k, b) + \sum_{i, a_i \neq a, a_i \neq b} C_n(T_k, a_i) = var_2 + \sum_{i, a_i \neq a, a_i \neq b} C_n(T_k, a_i)$$

As, at time T_j, in the neuron substrate there is no b^{var_2}, $\sum_{i, a_i \neq a} C_n(T_j, a_i) = \sum_{i, a_i \neq a, a_i \neq b} C_n(T_k, a_i)$ and also, from the **properties 4**, $var_1 \neq var_2$, it is obtained that $C_n(T_j) \neq C_n(T_k)$. At time $T_k + 1$ the same biochemical processes leading to c, at time T_0, will obtain a different controller $\overline{c}$ ($c \neq \overline{c}$), and the new substrate will undergo some changes into the receptors conformations inducing, this way, changes of binding affinity degrees of the post-synaptic neuron.

Consequences. Changes of the binding affinity degrees between neuron devices induce modified synaptic communications. Modifications of the binding affinities degrees of the receptors, determines (because of the alteration of the genetic expression) neuron's ability to adapt to its inputs and, so, it determines the modeling of the behavior of the the neuron device behavior with the memory of its new state into the memory of DNA leading, this way, to

- the learning process at the molecular level
- the neuron device as a feedback control system.

3   Conclusions

In this paper we focused on modeling synapses between neurons by modeling the binding affinities between them. The need of an internal timing that sets up the neuron activity rate is materialized in this timing assigned to each neuron unit, measured between consecutive activations of groups of genes and characterized by an intracellular feedback-loop. We also modeled, at one activation, the expression of a group of genes that encodes protein objects after what they will be deactivated until the next activation, finally leading to a process of learning at the molecular level defined as the neuron's ability to adapt to its inputs by altering gene expression.

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Towards Novel Approaches to Modelling and Verification of Biologically Inspired Multi-Agent Systems

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Abstract. This paper starts with a brief review of existing formal techniques used to model biology-inspired Multi-agent systems (MAS). Certain shortcomings of each are identified and towards this direction, we make our initial proposal for further research directions. We concentrate on a particular aspect, namely MAS simulation. We focus on a simulation platform for visual animation of MAS, namely NetLogo, which facilitates the informal verification of formal MAS models. Initial work done on this subject is briefly discussed. In particular, an abstract architecture of a system that could fully transform MAS models to NetLogo is presented. This includes a library for NetLogo which supports all mathematical primitives (sets, bags, sequences, etc.) found in formal models of MAS, as well as definitions of their associated operators. In principle, this paper's main objectives are to set the foundations of future developments in this area and to pose all the interesting research questions that arise.

Key words: multi-agent systems, formal models, verification, simulation

1 Introduction

An agent-based model (ABM) is used to describe complex phenomena as dynamical systems of interacting agents. The ABM agents are often familiar to actions such as adaptation and reproduction, introducing new computational paradigms for modelling these behaviour, which are principally found in biological inspired systems. Basically modelling can be accepted as one of the most essential stages in Multi-agent system (MAS) development and it can be carried out with many different techniques. However, as the complexity of a MAS increases, considerable difficulties get introduced in the process of formal modelling. Such large-scale communicating and/or emergent systems are hard to formally model due to the lack of expressiveness of current formal notations.

The appliances of the bio-inspired complex systems direct the requirement that these systems should be characterised with reliability, quality and robustness. Therefore, besides modelling, verification and testing could be considered the next important steps in the developing cycle. However, it is fairly straightforward (although not easy) to apply the known verification and validation techniques to biological systems composed from one agent, but it is extremely hard to transfer such techniques to MAS. This is particularly the case when the MAS is characterised with a dynamic behaviour (explained in details in the next section) because the amount of errors increases with the amount of interacting components. Thus, the computational complexity results in formal verification of a complete formal model as well as complete testing being almost impossible. Along with this complexity, it may be also impractical to apply known formal techniques due to the vast amount of time (combinatorial explosion of state space) and effort spent. However, if formal verification is accompanied with simulation, as an informal yet powerful verification technique, this may discover flaws of the formally unverifiable dynamic communication within a MAS.

A discussion towards formal modelling of the dynamic behaviour of biologically inspired agent-based systems is presented in Sect. 2, demonstrating the basic characteristics that should be met within a formalism that supports modelling of these systems. This is then supported with a brief review of advantages and disadvantages from some existing formalisms and frameworks. The next section, Sect. 3, refers to verification techniques and presents the implications from using model checking as formal and simulation as informal verification technique for biological systems. This will then lead to an idea developed on this topic and an initial work would be presented in Sect. 4. Finally, Sect. 5 summarises the future directions for research, and Sect. 6 concludes the preliminary work done so far.

2   Formal Modelling of the Dynamic Behaviour of Biologically-Inspired, Agent-Based Systems

There are varieties of formal methods in agent-oriented engineering which basically focus on different aspects of the development. Some of them focus on the data structures and operations of a system (Z, VDM [1], [2]), or some others into demonstrating the control of its states (FSM, Petri Nets [3], [4]). These approaches are beneficial for modelling systems with a predetermined constant number of agents that is not expected to change. Nevertheless, this is hardly the case in biological systems wherein the simplest model is characterised with dynamic structural changes [5]:

- new agents might be introduced at any point in the lifetime of the system,
- existing agents might discontinue to be a part of the system (i.e. die),
- new communication links between agents might be established,
- existing communication links might be broken, and finally
- agents constantly change their primary identifier (e.g. positioning in space or direction) affecting the overall topology of the system.

With the attempt to correctly model a system with these properties, a number of approaches towards modelling MAS related biological phenomena have been developed, such as: X-machines and Communicating X-machines (CXMs) [6] [7], P Systems and Population P Systems (PPS) [8], [9], the OPERAS framework and its instances OPERAS$_{XC}$ or OPERAS$_{CC}$ [5], FLAME [10], [11] and others (e.g. [12]). Taking modelling into consideration, these formalisms characterise with certain advantages and disadvantages, as summarised in Table 1.

Moreover, there is a group of formalisms for modelling systems with dynamic structural changes, based on process algebras like PI-calculus, Communicating Sequential Processes, etc (an example of such formalism is Api-calculus [13]).

3   Formal and Informal Verification for MAS

Formal verification is a process which employs formal methods to confirm that a model satisfies the user requirements [14], [15], [16]. *Model checking* is one of the most widely used formal verification technique. Model checking focuses on thorough exploration on a predetermined state space, trying to conclude whether some properties of a complex system are being met. Basically, a model checker accepts as an input the model (as a labelled transition diagram) and a property defined with temporal logic [14], [15]. Then the checker would either verify that the given property is true, or will provide a counter-example, by following a specific search strategy on the labelled transition diagram.

As the complexity of a biological model increases, applying formal verification may not be always trivial, or in some cases it may not be even possible. Moreover, along with the complexity, it may be also considered as impractical strategy due to the exponential time and effort [17], [5]. X-machines are accompanied by a model checking technique (where XmCTL is used to express logic formulae [7]) and complete testing (under certain assumptions, using a method derived from Chow's W-method for Finite State Machines [7], [6]). However, verification still remains problematic when Communicating X-machines are considered. The only possible approach is to formally verify and test individual components, but not the system as a whole. Similarly, P Systems and PPS are not supported with well founded formal verification or test techniques as well, although some initial attempts have been made. On the other hand, the OPERAS framework always carries the legacy of the formal methods used in each OPERAS component. However, if formal verification is accompanied with *simulation* as an informal verification technique, this would discover the flaws of the formally unverifiable dynamic communication within a bio-system. Moreover, it would provide means to facilitate the communication gap between the formal experts and the biologists (which in turn have no formal background) by providing an immediate feedback understandable to both of the teams.

In biological MAS, *animation* becomes even more interesting because of the spatial attributes of an agent, e.g. agents move in a 2-D or 3-D space. This raises the question: *Having a model of a system, how can we visualise it?* An animator as a form of simulation, is any kind of program which given the code in the

Table 1. Advantages and disadvantages for modelling of X-machines, CXMs, PPS, OPERAS and FLAME

Advantages	Disadvantages
X-machines	
– Ability to model the internal states of an agent, the agent's perception, the agent's knowledge of the environment and how the agent can change its internal state and knowledge when a function is triggered.	– Do not support birth of agents (dynamically creating agents) and death of agents (dynamically destroying agents). – It is not easy to specify agents that continuously move in space.
CXMs	
– Offer a very successful way to represent the static links and exchange of messages between agents.	– Reconfiguration of the structure within the system remains not achievable. – It is not easy to model the topology of MAS.
PPS	
– Support rules for reconfiguration of the structure within the system. – Deal with a dynamic system's structure (describing the behaviour of a system). – Support rules for cell birth and cell death (ability to reconfigure a system throughout its lifetime).	– It is hard to group objects based on their use (distinguish different attributes of an agent). – The objects are the only way with which an agent's internal state can be represented.
OPERAS	
– Contemplates into separating the behaviour of an agent from its control (modelling each of them individually). – Provides ground to formal description of the changes occurring in the structure of a dynamic MAS.	– Protocols for agent communication and interaction are not supported. – There is not a straight forward way of changing an agent's role other than replacing the agent with a new one from the desired role.
FLAME	
– Successful in modelling many biological systems. – Provides automatically parallelisable models. – Allows high concentrations of agents to be simulated and the results to be achievable in finite time. – Functions are written in C and thus they are directly executable.	– Supports only fundamental data-types. – Functions can not be written in any other language other than C, which is not a formal language.

intermediate language, implements an algorithm to facilitate the computation of the model and its output though a textual description [17], [5]. However, all of the techniques mentioned so far share one major drawback, i.e. the outputs they produce are in a textual form and thus not even close to the real visual perceptions on the system.

NetLogo [17], [18] is a simulation platform for visual animation of multi-agent systems regardless the number of agents, being supported by a functional language that could represent agent's behaviour, as well as an environment for creation of a graphical user interface. NetLogo facilitates the verification of a biological model in a way that simulation scenarios may be executed, thus the expected behaviour of the system could be compared to the visual outcome.

A recent research [19] demonstrates an example of discovering errors with NetLogo simulation. As discussed in [19], the simulation showed that the original model suffered from some shortcomings that could only become apparent through simulation and not through model checking. Moreover, NetLogo supports simulation of medium to large scale models. One example is the Segregation model, which was inspired from social systems (such as housing patterns in cities) and demonstrates a large-scale patterns model [18].

Discussing of the benefits to employ NetLogo in the development framework, there is still a single question remaining: *Having the model of a system, how do we get code for NetLogo?* The conversion process of mapping a communicating X-machine specification (written in XMDL or in any other XML notation for X-machines [12]), or a PPS specification (in PPSDL or in any other known notation for PPS) to NetLogo code is an interesting issue because it must be demonstrated that both representations are assumed to stand for the same model.

4 Modelling XM to NetLogo

An initial work that was done on this topic includes a NetLogo interpreter for communicating X-machines that would enhance automatic, or semi-automatic transformation from XMDL specification to NetLogo structures providing an accurate simulation of the model (see Fig. 1).
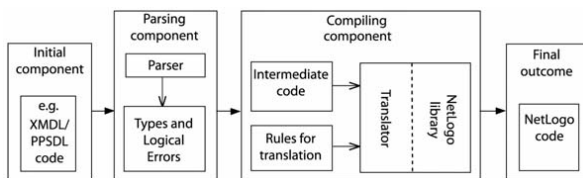
Fig. 1. System architecture for compiling X-machine/PPS specification to NetLogo code.

As it could be seen from Fig. 1, there are two main intermediate components in the architecture, the parsing and the compiling component. The parsing component takes care of the all possible errors (types and logical errors) that might occur in the model's representation. The compiling component contains all the rules and logic for translation, as well as the NetLogo library. An initial NetLogo library is under development, and by present time it provides support of mathematical primitives (sets, bags, sequences, etc.) and their operations (some examples are given in Table 2). It will also support characteristics found in biologically inspired multi-agent systems, like functions that represent their basic behaviour (movement to a certain position, perception of the environment, etc.) or even functions that deal with modelling the environment (defining obstacles, defining agents, etc.). The later will be defined semi-automatically since they are not part of the MAS model.

Table 2. Examples of the NetLogo library

Math primitive	NetLogo structure	Operations	NetLogo functions
set e.g. set1={a, b, c} set2={a, d, e}	list e.g. ["a" "b" "c"] ["a" "d" "e"]	$=$	are_sets_equal
		$\cup$	set_union
		$\cap$	set_intersection

5 Future Directions for Research

Certain questions and ideas for future research were inspired from the problems on modelling (summarised in Table 1 and verification, see Sect. 3). Questions and ideas were brought up for possible overcoming of those and some of the most important concerns could be highlighted in this section.

Having already discussed in Sect. 4 about the NetLogo interpreter for communicating X-machines, one might argue that the biological agent models might be very abstract, i.e. there is a freedom in the representation of a model. On the other hand, for simulating a biological agent, certain knowledge is required, like for example the initial position or direction of the agent. This introduces difficulties in simulating a given model, because an X-machine does not specify how these knowledge will be modelled. Here originates the idea of extending X-machines into more specific formalism for modelling spatial agents, as a future work. Other challenges on this topic are the representation of the CXMs memories in NetLogo and their manipulation, the interaction of CXMs components in NetLogo, as well as the translation of the functions from X-machines to NetLogo code.

Driven with the above-presented idea, the research can be extended in a similar direction: Could we provide automatic translation from X-machines or PPS representation to a higher level programming language? Concerning x-machines, there is a work presented in [12] that offers a JSXM tool introducing a new syntax for X-machines specifications based on XML and Java. In addition to models transition, very interesting research could be conducted on investigating the possibilities to translate FLAME in the OPERAS framework. Similarly, could we provide automatic translation of a MAS formal model to a model checker code, such as SMV [20], SPIN [21] etc.?

Regarding the modelling formalism, some ideas were developed for OPERAS and FLAME. A question might be imposed for OPERAS on whether employing other formal methods (beside XMs and PPS found in OPERAS$_{XC}$) would be advantageous and what would be the emergent behaviour? Similarly, another question is whether FLAME can be adopted into the OPERAS model and what would be the advantages and disadvantages of the new structure? Additional future research about FLAME will also consider what are the different ways messages can be used as a communication relation between agents, and how this can be adopted for modifying the architecture (a tree structure instead of the message list structure).

As it was already discussed, there are difficulties of applying formal verification for biological MAS, which sets yet another future research direction: it is possible to develop a theory for verifying and testing communicating systems as a whole? Along this concept, is there a way to support testing of CXMs, PPS and OPERAS? Similar questions can be imposed in regards of simulation as well, i.e. whether OPERAS and FLAME can be supported with visual simulation by providing a mechanism to generate NetLogo code. It would be specifically interesting if a FLAME translation is done, to be compared to the existing FLAME's build in simulator.

6 Conclusion

This paper presented the advantages and disadvantages of some existing formalisms for representing biologically inspired MAS with special focus on the difficulties in formal modelling, verification and testing. This lead to an initial work of automatic, or semi-automatic transformation from X-machine specification to NetLogo structures providing an accurate simulation of the model. However, the main aim of this paper is to raise interesting questions and ideas. These were presented with the expectation that they would lead the further directions of this research.

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Networks of P-systems and Petri Nets

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Abstract. This paper describes a connection between p-systems and Petri nets. Petri nets (PNs) can describe a very large domain of systems. P-systems represent a computational model that describe the interaction between chemical processes and their membranes. A network of p-systems(NPS) consists of several p-systems placed in one graph as nodes. Each node is working as an usual p-system. The nodes are communicating between them in accordance with some rules. These rules are also inspired from membrane computing and they are symport/antiport rules. Graphical symbols associated with Petri nets are used to describe the behavior of the p-systems. In this paper for a given NPS is presented a formalization using a place transition Petri net(PTN). Then it develops an analysis on the behavioral properties, like reachability, boundedness, liveness, in the NPS based on this formalization. The formalization is showing that is having a more modeling power.
Keywords - Petri nets, token, networks of p-systems, reachability, boundedness, liveness.

1   Introduction

P-systems were introduced by Gheorghe Păun in the paper Membrane computing. They describe the behavior of the cells and the interactions between the chemical processes from the cell and the membranes. From the time Păun introduced them until now, many types of p-systems were defined in the natural computing area. Most of them are inspired from the nature and describe in an abstract way distributed parallel computing models. A p-system consists of a set of m hierarchically nested membranes, each of them delimiting m distinct membranes. Each membrane contains a multiset of objects and a set of rules. The rules can be applied just to the objects from that membrane and they can destroy, create or move the objects from one membrane to the other. The system is having a nondeterministic and maximal parallel evolution. That means that at every step, the actual configuration is changed into a new one by applying of the maximal multiset of rules, in a nondeterministically way.

A Petri network is a mathematical representation for the discrete distribute systems. As a modeling language, it can describe graphically the structure of a distributed system using a direct graph with labels. This network contains nodes which can determine the places, nodes that can determine the transitions and direct arcs that are connecting the places with the transitions. This paper will use in the model process a place transitions network(PTN). In a PTN the places are labeled with a positive number that is called the capacity. This represents the maximum number of tokens that can be in one place. The arrows can be labeled with a positive number representing the weight. If the weight is 1 it will be omitted.

The framework described here is combining the properties for the p-systems and for the PN to obtain a very expressive model and with a higher power in modeling systems.

1.1 Networks of p-systems

There are many types of p-systems known in the membrane computing area. This paper tries to combine n p-systems and make some connections between them. The p-systems from this construction are the same type like the one presented in [2] with some additional rules. Each p-system will have an individual behavior and some interactions with the other p-systems from the construction. The rules providing the interaction between the p-systems are just symport/antiport rules. This means that the objects can neither be destroyed, nor created, just transported from one membrane to another. The membrane structure is static. This construction will be called network of p-systems (for short NPS).

Definition 1. *A network of p-systems (of degree $n \geq 1$) is a construction of the form:*

$$P = (\Pi_1, ..., \Pi_n, G)$$

where
  i) $\Pi_i = (O_i, \mu_i, w_i, R_i, R_i')$, for each $1 \leq i \leq n$, where:
    - O_i is the alphabet of objects,
    - μ_i is the membrane structure (of degree $m_i \geq 1$ labeled with natural numbers $i_1, i_2, ..., i_{m_i}$),

- $w_i = \{w_{i_1}, ..., w_{i_m}\}$ *are multisets over* O_i *and represent objects contained in each membrane* $i_1, ..., i_m$ *in the initial configuration,*

- $R_i = \{R_{i_1}, ..., R_{i_m}\}$ *are evolutionary rules associated with each membrane,*

- R'_i *are communicating rules associated with the p-system* Π_i.

ii) $G = (\Pi_1, ..., \Pi_n, E)$ *is a undirected graph and is called the underlying graph of the network. The set* E *contains the edges of the graph and they are represented as pairs of two nodes.*

In each p-system $\Pi_i, 1 \le i \le n$ the rules $R_{i_j}, 1 \le j \le m_i$ are evolutionary rules that can be applied just in the membrane i_j and just for the multiset from this membrane. These rules can destroy, create or transport the objects from one membrane to the other, but just inside the p-system Π_i.

Evolutionary rules corresponds with the chemical reactions from the cells and they can be of the form $u \to v$, where u and v represents multisets of objects. To let the membranes to communicate there is important to make the objects to cross the membranes and for this there must be used *target indicators* to the objects produces by the rule above. These indicators are: *here* which means that the object with this indicator will remain in the same region; *in i* which means that the object with this indicator will go directly to the region i; *out* which means that the object with this indicator will go in the next external region.

The rules R'_i represents evolutionary rules providing the communication between the p-systems of a NPS. These rules can just transport objects from one p-system to the other in the network and they cannot change the object. These rules are just communication rules and they are similar with the rules used in the symport/antiport p-systems. The formalization of the operations of the rules from R'_i, as in [1], can be realized as:

- *(ab, in j)* or *(ab, out j)* are symport rules, that means that a and b pass together through the p-system Π_i. For the first case a and b enter into the p-system Π_i from Π_j and in the second case come out from Π_i and go to Π_j. This rule doesn't allow a or b to pass separately through the p-system. For this case it is necessarily another rule like *(a, in i)* or *(a,out i)* named uniport.

- *(a, in j; b, out j)* represents an antiport rule, that means that a enters from the system Π_j and b goes out from the p-system Π_i to the p-system Π_j.

In a NPS the p-systems has connections with more than one p-system, so it is necessarily to specify the p-system that is communicating with.

The rules from the set R'_i are applied for the p-system Π_i. For the case $(a, in j)$, the set of objects a enters in the p-system Π_i in the region delimited by the skin membrane. For the case $(a, out i)$, the set of objects a goes out from the p-system where the rule is written in and enters into the skin membrane of the system Π_i. For the rule $(a, in j; b, out j)$ in the p-system Π_i, the set of objects a enters in the skin membrane of the p-system Π_i from the p-system Π_j and in the same time the set of objects b goes out into the skin membrane of the system Π_j.

For a NPS a configuration is represented through a vector with n components $C = \{L_1, ..., L_n\}$, the component i is the multiset of objects from the node $i, i = 1, .., n$. The first configuration will be $C_0 = \{w_1, w_2, ..., w_n\}$. A transaction represents the passing from one configuration to another by applying either an evolutionary step or a communicating step. When applying an evolutionary step, each component L_i will change in accordance with all evolutionary rules that can be applied in the node i in that moment. Formally, we say that a configuration $C = \{L_1, ..., L_n\}$ directly changes into a configuration $C' = \{L'_1, ..., L'_n\}$ using an evolutionary step if each component L_i changes into L'_i by applying all the evolutionary rules R_i from the node i to the strings from L_i and we write $C \Rightarrow C'$. When applying a communicating step, each component L_i will change into L'_i in accordance with the communicating rules from the node i. Formally we say that a configuration $C = \{L_1, ..., L_n\}$ directly changes into a configuration $C' = \{L'_1, ..., L'_n\}$ through a communicating step if each component L_i changes into L'_i by applying all the communication rules from R'_i that can be used for the strings from L_i and we write $C \vdash C'$. A computation in a NPS is represented by a sequence of transactions through the configurations from the initial configuration C_0 and applying consecutively an evolutionary step and a communicating step. A computation is successfully finished if it begins with the initial configuration and gets a configuration in which

it is not possible to apply any rule for any object. A macro-step in a NPS can be of two types in accordance with the kinds of rules in the network:

- evolutionary rules: the macro-step means that all the evolutionary rules are applied in all the regions in the maximality parallel manner;

- communication rules: the macro-step means that all the communicating rules are applied in all the nodes in the maximality parallel manner.

1.2 Modeling networks of p-systems with place/transition Petri nets

The representation of a p-system with PTN was done in some papers before [4], [5], [6]. This paper describes a network of p-systems modeled with a PTN. A NPS is realized through the interconnection of n p-systems. To model a p-system we transform the objects into places and we represent the number of copies of each object in a p-system through the number of tokens in the place used to describe that object. Each rule from the p-system will be modeled as a transition and all the objects used in that rule will represent tokens used to enable a transition. The objects produced from one transition will represent the postcondition of that transition. The representation of each p-system in a NPS will be done as we described above. So, to make the representation of the NPS itself there must be represented also the connections between the p-systems. Because the communication rules are placed just in the skin membrane of each p-system and they are applied just for the object from this membrane, to model them means to represent these connections in PN. These connections will be modeled as transitions from the objects from the p-system 1 to the objects from the p-system 2.

1.3 The behavioral properties in the Networks of p-systems

This section analyze the behavioral properties of an NPS modeled by a Petri net. In [8] are described many important properties for the PTN. These properties can be investigated also for the NPS. In [4]

is done the description of the behavioral properties for a p-system. Because a NPS is also a p-system, and because a p-system modeled with a PTN is still a Petri net, we can introduce these properties as follows below.

Definition 2. *For a given NPS, we have the following properties:*

i) A NPS is terminating *if the sequence of transitions between configuration is finite.*

ii) Boundedness *for a NPS can be seen in two ways: local and global.* Local boundedness *suppose that the number of copies of each object in each region to be less than a given integer k. For a given integer k, the NPS is said to be* global boundedness *if the number of copies of each object in each node is less than k for every configuration reachable from C_0. A NPS is said to be safe if $k = 1$.*

iii) A configuration C_n is said to be reachable *if there exists a sequence of transactions that transform C_0 in C_n.*

iv) A NPS is said to be live *if is deadlock-free and for any configuration reachable from C_0 there is a sequence containing all types of macro-steps. (A NPS is said to be a* deadlock-free *if each reachable configuration enables a next macro-step.)*

Theorem 1. *If the PTN for a given NPS is terminating, then the NPS is terminating.*

Proof: [4] If the NPS is not terminating, then there exists an infinite macro-step sequence. When the NPS is modeled using the PN, then there also exists an infinite macro-step sequence. Every macro-step consists of some transaction-steps and send transitions and each of this is a one-to-one mapped to a transition in the PN. So the sequence of transitions in the PN is not finite. Thus the PN is not terminating.

Theorem 2. *If the PTN for a given NPS is boundedness, then the NPS is boundedness.*

Theorem 3. *If the configurations in the PTN for a given NPS are reachable, then the configurations in the NPS are reachable.*

Theorem 4. *If the PTN for a given NPS has liveness, then the NPS has liveness.*

The proofs for the Theorem 2, 3, 4 are the same for Theorem 1 .

2   The Readers-Writers Problem

Nowadays it is a very common problem in computer science in sharing resources among several processors or among several threads in a distributed processing system. PNs are used to synchronize different types of mechanisms, including the mutual exclusion, readers-writers, and producers-consumers problems [8]. For the readers-writers problem there are several processes that access the same critical resources. One process is writing using the resource and the others are reading. One process that cannot get the required number of resources will wait until they will be available.

When the producer, in Fig. 1, 2 sends the resources to the writer, the three tokens go to the place a in membrane 0. From there they are used in a transition and go the membrane 2 going through the interconnection between the two membranes. So they are leaving membrane 0 in Out_1 and go to the membrane in In_1. Here there is started the first page writing. When the 28 lines from the first page are ready (page 1 is complete) the control is given to the membrane 2 that is interconnected with the membrane 1. Here again is starting
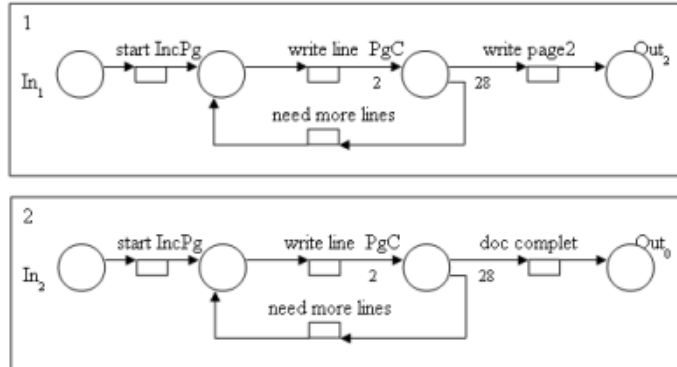
Fig. 2. The reader/writer problem

the page writing and then when the document is complete, the control is given to the membrane 0, where the resources are returned to P. This example is showing that even if there they have the same expressive power, this framework is having a more modeling power than NPS.

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Feature Based Stitching Experimented on Images Collected by Confocal Scanning Laser Microscopy

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Abstract. A frequent issue for people working in microscopy is represented by the possibility of one being unable to collect an image representing the whole specimen of interest because of the limited field of view of the microscope. This situation applies to the vast majority of microscopy techniques among which classical optical microscopy, confocal scanning laser microscopy (CSLM), scanning electron microscopy or scanning probe microscopy. Image stitching (also known as 'mosaicing') is performed in the purpose of building a single image from the contents of many. The individual images represent tiles, and the resulting collection of assembled tiles forms the mosaic which covers a larger field of view than any individual tile itself. The methods for image stitching that have been presented in literature up to now can be seen as belonging to two categories: direct and feature based. Feature based stitching provides the results in an automatic way, but the results depend heavily on the image content, which is linked to the ability of the feature detector to detect common invariant features from two ore more images, which can later be matched based on local feature descriptors. In this paper we present, together with aspects related to image formation in CSLM, a feature based automatic mosaicing method based on a recently developed method of detection-description of local features, experimented on images collected by CSLM. For two overlapping images to be stitched the method goes as follows: local features are extracted from the two images, the features detected from the same physical locations are matched based on their descriptor vectors. Based on this found correspondences a transformation matrix is computed and is further on used to align the two images in order to create a mosaic. The results show that feature based methods can represent a solid solution for CSLM image stitching.

Keywords: Image stitching, image mosaicing, local features, confocal scanning laser microscopy.

1 Introduction

Image stitching (or mosaicing) represents the task of building a single image from the contents of many. The individual images represent tiles, and the resulting collection

of assembled tiles forms the mosaic which covers a larger field of view than any individual tile. The methods for image stitching that have been presented in literature up to now fall under two categories : direct [1],[2] and feature based [3],[4] . The direct methods use all image data and can provide very accurate registration. This advantage however comes along with computational costs and an initialization of the matching procedure performed by the user, who must suggest some basic relationships between the images that are to be stitched. Feature based stitching provides the results in an automatic way, but the results depend heavily on the image content, and more precisely on the ability of the feature detector to detect common invariant features from two ore more images, which can later be matched based on their descriptors. The number of common extracted features depends on the acquisition conditions under which the images have been collected.

In this paper we present how invariant local features can be used to create a mosaic of images collected by CSLM. The specific characteristics of the acquisition process present in CSLM allow us to ignore classical problems that have to be taken into consideration when stitching natural images for the creation of panoramas. Issues such as correcting lens distortions, parallax, and motion within the imaged scene or illumination artifacts are inexistent due to the image formation mechanism in CSLM. However the stitching process faces other kinds of issues such as presence of background noise, presence of similar patterns in different images or the robustness of local features to image modifications introduced by specific acquisition parameters of CSLM. Even though the situation looks to some degree simpler than the case of stitching of natural images for the construction of panoramas, the task of stitching CSLM images remains a complex process, as the resulted image has to respect a high geometric accuracy in order for various measurements of computer vision applications to be targeted on these images. Examples on the results of image stitching in the field of microscopy can be found in recent literature [5],[6],[7].

2 Image Formation in CSLM

When applied to images collected by any microscopy technique all classical computer vision algorithms have to be adjusted to the specific image content of that technique. The image content is directly linked to the image formation mechanism, and understanding the image formation mechanism for the people who design computer vision applications for microscopy is essential. In this section we present basic concepts regarding image formation in CSLM.

CSLM represent one of the most important advances in microscopy as it provides the possibility to observe thin optical sections in thick, intact specimens [8]. This is because the pinhole obstructs the light rays coming from outside the focal plane to reach the detector. Based on the collected optical sections 3D representations can further on be rendered. A basic schematic of a CSLM is shown in Fig. 1.
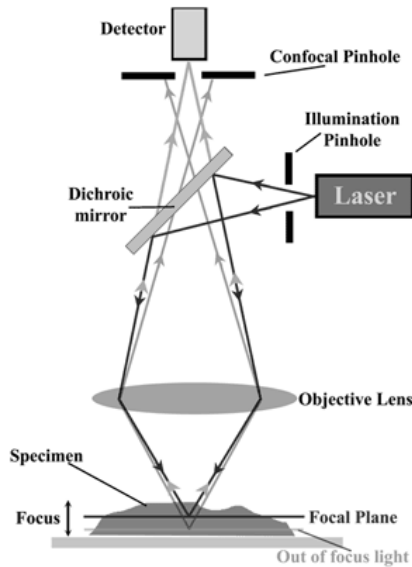
Fig. 1. Principle of Confocal Scanning Laser Microscopy

While in conventional microscopy, the image formation is instant, in CSLM the illumination light is scanned onto the specimen dot by dot through a mirror on galvon-motor-driven scanner. The emitted light from specimen is collected and de-scanned dot by dot then passes through detecting pinhole and reaches the detector. In the case of CSLM systems, the detector is a photo multiplier tube (PMT), which presents a wide dynamic range and has high photon sensitivity suitable for detecting both strong and weak signal at a very quick refresh rates, in a time range of nanoseconds. The PMT detects light and converts photon hits into analogue electron flow as electrons leave the photocathode of the PMT, having the energy of the incoming photon. After the electrons follow a path which amplifies their number, they reach the anode of the PMT, where the accumulation of charge results in a sharp current pulse indicating the arrival of a photon at the photocathode. The continuous analogue current signal is then sampled at separate time point, digitized into discrete digital signal by Analogue to Digital converter (ADC), then processed by image processor, dot by dot into a line, and line by line into a frame.

The aspect of a CSLM image is directly linked to the modification of specific acquisition parameters of these technique, such as pinhole aperture, PMT voltage,

laser beam power, scan speed, used wavelength, beam splitter selection, etc. Aspects regarding the influence of specific acquisition parameters of CSLM to the detection and matching of Scale Invariant Feature Transform (SIFT) features [9] have been discussed in [10]. The experiments presented there show that an important ratio of common local features extracted by the 'Difference-of-Gaussian' detector can be extracted from images collected at different apertures of the pinhole, intensities of the laser beam, but the local feature repeatability drops significatively under modifications of the PMT gain.

3 Feature-Based Stitching

Feature based stitching consists of the following steps:

- For each image local features are identified. Depending on the image characteristics, one of several local feature detectors can be used. Among the most used feature detectors we mention Laplacian of Gaussian, Difference of Gaussian, Harris, Hessian, Hessian/Laplace, Harris/Laplace. In the design stage of the stitching system, a study should be performed in order to establish which of the detectors is able to find a maximum number of keypoints for the images of the investigated object, under the premises of a good repeatability rate. By repeatability we understand the ability of the detector to extract local features from the same locations of an image, independently of the acquisition parameters at which the image has been collected.
- For each detected feature a descriptor is assigned. Recently, several methods for local feature description have been developed, comparisons reported in literature have presented good results in terms of precision and recall for the SIFT, SURF, PCA-SIFT, GLOH descriptors. The performance of the matching procedure, represented by the ability to correctly match as many local features based solely on their descriptors depends on the modifications to which the images have been exposed.
- The descriptors of the local features are matched. Very common matching strategies are the ones based on nearest neighbor. In this case the similarity between the descriptors is established by calculating the Euclidean distance between each descriptor from one image and all the descriptors from the image to which it is being matched. If the Euclidean distance between two descriptors fall bellow a threshold, and the two are closest neighbors in terms of Euclidean distance a match is considered.
- The amount of matched feature points is quite large, in the range of hundreds or even thousands, depending on the image content. However, only four pairs can fix a transformation matrix. In order out to choose the right four pairs which can provide the correct transform matrix, Random Sample Consensus (RANSAC) [11] is performed. RANSAC is an estimation procedure that uses a minimal set of randomly sampled correspondences to estimate image

transformation parameters, and finds a solution that has the best consensus with the data. In our case the solution represents the transformation matrix.

- The physical correspondences between the remaining consistent features are used to calculate the homography between a pair of images, which means finding the projective transform which maps one image onto the other.
- After the two images to be stitched have been registered and aligned artifacts known as seams are visible along the line of overlap. In order to resolve this issues image blending algorithms have to be performed. A simple solution for eliminating the seams is gain compensation. However, even after gain compensation some image edges are still visible due to a number of unmodelled effects, such as vignetting, parallax effects due to unwanted motion of the optical centre, mis-registration errors due to mismodelling of the camera, radial distortion and so on. The blending strategy is important as it helps achieve an image aspect with no visible artifacts in the regions of overlap. As the blending methods are independent of the alignment methods, the gained speed in feature based image mosaicing is directly linked to the automatic alignment of the overlapping images and not on the blending method being used.

4   Experimented Method & Results

For our experiments we have detected and matched local features using the 'Fast-Hesian' detector and Speeded-Up Robust Features (SURF) descriptor, both introduced in [12]. In SURF, keypoint localization is performed by a detector based on an approximation of the Hessian matrix, and for a given image point uses box filters in order to approximate second order Gaussian derivatives. This represents a very basic Laplacian-based detector. Further on each detected keypoint is assigned a descriptor. In order to construct the descriptor, the regions are split up regularly into smaller 4x4 square sub regions. The Haar wavelet responses (dx, dy) in horizontal and vertical directions are used. The responses dx and dy are first weighted with a Gaussian centered at the interest point, and finally are summed up over each sub region, contributing to the formation of the feature vector. The describing vector of the feature has a length of 64 elements.

In fig. 2 we present three images acquired by CSLM while imaging vascular bundles on a thin transversal section of the rhizome of a *Convallaria Majalis* sample, with the SURF features detected in them being overimposed. The three images were collected for overlapping regions in fluorescence workmode, at 40X magnification by scanning a 488 Ar-ion Laser beam, and using a pinhole aperture of 1 Airy. The voltage applied on the PMT at the time of acquisition was 610V. No averaging was applied. The resolution of the collected images was of 512x512 pixels.

The transformation matrices necessary to align the images in order to create the mosaic have been calculated using the RANSAC algorithm.
 All operations have been performed using MATLAB (The Mathworks, Natick, CA).
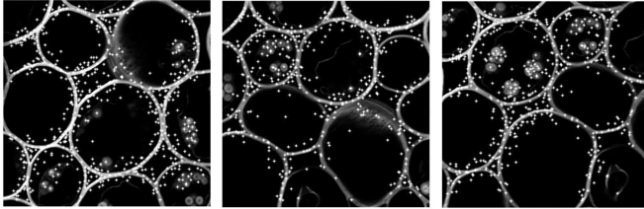
Fig. 3. Three images collected by CSLM on overlapping regions and detected SURF features

After registering and aligning the three images, we have used the blending method proposed in [7] for eliminating the visible seams. The resulted image mosaic is shown in fig. 3.
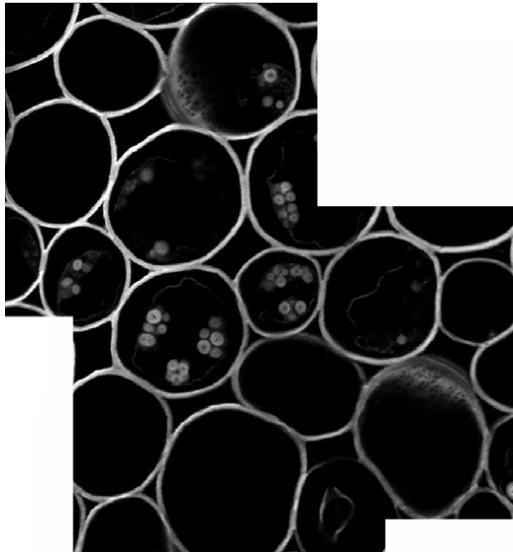
Fig 3. Feature-based assembled mosaic

5 Conclusions

Image stitching represents an important tool for microscopists as in many cases the field of view does not allow the imaging of a whole object or structure. By combining automatic stitching with user controlled or automated x-y movement of the sample stage, visualization of whole structures becomes easy. Also by acquiring a large number of fields of view from a single microscope slide, and then stitching them, a single large 'virtual slide' image can be achieved which can later on be used for Virtual Microscopy [13]. Furthermore, 3D reconstruction from optical sections of high x-y dimensionality leads to more representative models of the imaged structures.

Direct based methods of image mosaicing can provide very good results in terms of tile alignment; however these are time consuming as they have to be assisted by an operator, being difficult to automate. Feature based methods present a solid advantage from this point of view. The advantage in terms of speed is however not quantifiable as we consider different types of techniques, one which is operator assisted and one which is fully automated, nevertheless the offered advantages are not difficult to comprehend. In our experiment of feature based stitching for images collected by CSLM a consistent number of SURF features are extracted from images acquired by this technique with good repeatability, thus providing the possibility to calculate the necessary transformation matrices for the alignment. The achieved image mosaic does not presents any misalignment artifacts and indicates that feature based mosaicing can represent a solid solution for the automatic stitching of images collected by CSLM

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Agents in the Control Process Domain

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Abstract. Modern control systems must cope with significant degrees of uncertainty, as well as with more dynamic environments, and to provide greater flexibility. This, means that control systems software is highly complex. This complexity requires to employ the efficacy of the agent-oriented software engineering approach. In this article, we will argue that analyzing, designing, and implementing control complex software systems as a collection of interacting, autonomous, flexible components (i.e., as agents) affords software engineers several significant advantages over contemporary methods. A case study in the domain of control process is treated where the experiences of using an agent-based approach is assessed.

Keywords: Agent-based system, control system, agent-based approach

1   Introduction

Nowadays multi-agent system technology is being used for a wide range of control applications including scheduling and planning [1], diagnostics [2], condition monitoring [3], distributed control [4], hybrid control [5], congestion control [6], system restoration, market simulation [7], network control [8], and automation. Multi-Agent System is exploited in two ways [9]: as an approach for building flexible and extensible hardware/software systems, and as a modeling approach. We note an interesting link between the desirable properties of intelligent control systems for complex autonomous systems and the behaviour of agent-based systems. Many benefits are derived from the characteristics of the agents reactivity, proactiveness, and social ability. This paper begins by describing essential concepts of multi-agent systems that are related to the control systems and presents why multi-agent systems are being used for a number of control engineering applications. Additionally, a case study in the domain of control process is treated where the experiences of using an agent-based approach is assessed.

2   Agents in Control Engineering Applications

Multi-Agent System has been investigated as a new approach for control systems modeling and implementation. The following description presents why agents technology is supposed appropriate for control engineering application.

There are many control engineering applications that flexible and extensible solutions are useful for them. Agents can provide a way for building such systems. Wooldridge [10] extends the definitions of an agent to an intelligent agent by extending the definition of autonomy to flexible autonomy. This is the ability to respond to dynamic situations (environment) correctly, to select the most proper actions from a set of actions [10]. Extensibility implies the ability to easily add new functionality to a system, or upgrading any existing functionality [9]. The agent framework provides the functionality for messaging and service location, it means that new agent integration and communications are handled without effort from the system designer [11]. This creates extensible systems: extra functionality can be added by deploying new agents in system, and some parts of systems can be upgraded by deploying a replacement agent and removing the old one.

Across many applications in control engineering there is also a requirement for the distribution of the controller elements throughout the system. Agents own the properties to produce this quality. The agent platform is adequate for distributed systems. An agent is separate from its environment, it means that it can be placed in different environments and still has the same goals and abilities. The same set of agents can be deployed on one computer, and alternatively on multiple networked computers, without modifying or changing the agent code [11].

Fault tolerance is another requirement in many applications in control engineering. The flexibility offered by an open architecture of agents with social ability will provide a tolerance to physical faults. Agents use their own localized knowledge for decision-making, supplementing this with information gained by communication with other agents. Remaining independent of any kind of centralized control at while taking a local view of decisions gives rise to a tendency for robust behavior.

Adopting an agent-oriented approach to software engineering means decomposing the problem into multiple autonomous components that can act and interact in flexible ways to achieve their set objectives [12]; from a control perspective, this view of software systems has several similarities to work on hierarchical systems in distributed control.

Practical control systems generally are systems that consist of multiple control algorithms. Each control algorithm is designed to fulfill a particular task. In general, each control subproblem is different in nature and requires a particular design method for its solution. Also, each subset of controller modules requires a different combining technique. The agent-based framework is suitable and can be used to design and implement hierarchical structured multi-controller systems that consist of a set of heterogeneous control algorithms that are combined by heterogeneous techniques [13].

It is for these reasons that we consider an agent-based system to be a suitable model on which to base an intelligent control system for complex systems.

3   The Application

We will take into consideration a case study in the domain of control process with the aim to assess the experiences of using an agent-based approach. A thermostat device for a domestic heating system could be considered as an agent. It is situated in its environment. It reacts to temperature changes of environment. It also exhibits a degree of autonomy. The thermostat control problem is decomposed into a set of partial control problems, one of which is the setpoint generation problem.

Our application aims to present the design and the architecture of that component (agent) of the thermostat which provides the feature of programming the time instances by which a particular room temperature must be reached. Whenever a setpoint change is going to occur at an upcoming time instance and the new setpoint is higher than the current room temperature, the heater should be turned on. In order to achieve a room temperature equal to the new setpoint at the desired time, the heater should be turned on for a certain period before this time. This task is carried by an agent. Our agent is able to sense and record the difference between the time at which recovery to a new setpoint temperature occurs and the selected time at which this temperature is specified to be reached, and if the difference is nonzero, calculates a new time at which to begin recovery the next time a change to the new temperature is specified. A non-linear function is used to calculate the time at which recovery to the new temperature is begun.

The goal of our agent is to program the time to reach the new setpoint temperature at the preselectable time. The agent behaves either as being "active" or "inactive". If a setpoint temperature change occurs then our agent will be active. In the 'active' state, the agent calculates the time at which recovery begins.
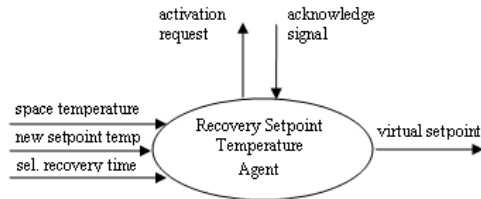
Fig. 1. Interface of the agent

Our agent is responsible for the initialization and finalization of its state variables, has knowledge about its operating regime and has an interface to coordinate its behavior with other agents that solve elementary control problems of the thermostat. The agent contains an activation request signal. The thermostat is considered as an multi-agent system. An object will coordinate the activity of the agents of the system. The activation signal is sent from our agent to that coordination object at the moment when the current time reaches the time at which recovery to the new setpoint

temperature occurs. So, an acknowledge signal, is sent from the coordination object to the agent. The agent becomes active and sends a recovery signal that provides a virtual setpoint temperature. The detailed diagram of our agent is presented in Fig.2.
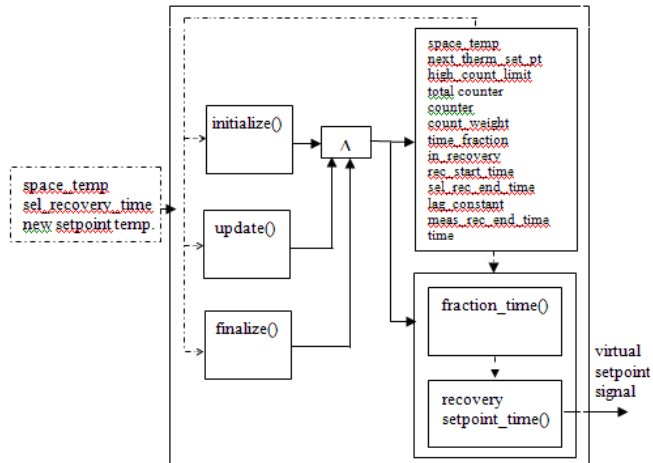
Fig. 2. The detailed diagram of the agent

Following we will see it in detail. When the agent switches from 'inactive' to 'active', it carries out some initialization or finalization functions to initialize, respectively finalize internal state variables of the agent The agent contains also, a calculate function that is being executed when the agent is active. It produces the recovery signal at the programming time Fig.3.

Fraction time value

The calculation of the time at which recovery begins takes account of the fact that greater time is required to achieve a one degree temperature change near the new setpoint temperature than far from it because of the additional thermal load on the space as temperature nears the new setpoint. To incorporate the non-linearity of response of the device controlling the temperature of the space a time fraction value is generated periodically according to the function dependant on the current space temperature and the preselectable comfort temperature setpoint range, where the time fraction value has a temperature derivative whose absolute value increases with increasing current temperature Fig.4.
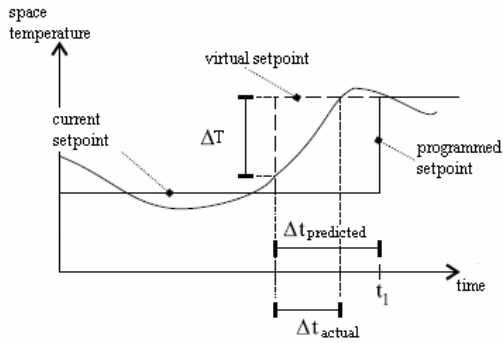
Fig. 3. Recovery signal that provides a virtual setpoint temperature

```
//this code calculates the time fraction value

private double calculateFractionValue (double
spaceTemp, double  nextTherSetPt){
//the sum of all count weights from 4° to 28°
  private final double highCountLimit =66.0;
  double fractionValue;
  double totalCounter = 0.0;
  double counter = spaceTemp;
  double countWeight;
while (counter < nextThermSetPt){

/*The predetermined temperature range which include the
preselected setpoint temperature range is divided into
intervals to each of which is assigned a count value */

  if (counter < 10.0){countWeight = 1.0;}
  elseif (counter < 16.0) {countWeight = 2.0;}
  else if (counter < 22.0) {countWeight = 4.0;}
  else if (counter < 28.0) {countWeight = 6.0;}
  else {countWeight = 8.0;}
totalCounter += countWeight;
counter ++;
  }
fractionValue = totalCounter/highCountLimit;
  return fractionValue;
  }
```
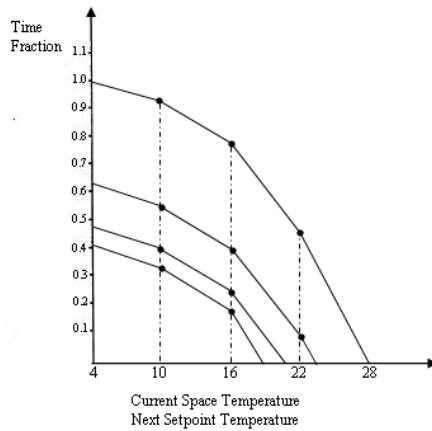
Fig. 4. The time fraction value as a function dependant on the current space temperature and the preselectable comfort temperature setpoint range

Inputs, outputs, parameters, state variables

inputs: spaceTemp,nextThermSetPt, selRecEndTime; outputs: virtualSetPt; parameters: tempTolerance, timeTolerance; and other state variables: time, inRecovery, thermSetPt, reStartTime, req, ack, lagConstant;

Initialize function

```
public void initialize (){
    req = false; ack = false; inRecovery = true;
}
```

Calculate function

A new setpoint temperature changes the state of inRecovery variable. If it is "not true" we calculate the time at which recovery should start to allow the space temperature to reach the next thermostat setpoint at the associated recovery end time.

```
public void recoveryTime (){
    if (not inRecovery){
```

```
        timeFraction = calculateFractionValue(spaceTemp,
        nextThermSetPt);
        recStartTime =selRecEndTime – (lagConstant *
        timeFraction);
    }
}
```

The agent becomes active when the current time reaches recStartTime and provides a virtual setpoint temperature signal. The agent goes in operating regime.

```
public void activate (double nextThermSetPt){
    if (abs(time-recStartTime) < timeTolerance){
//a request signal is sent to the coordinator object
    req =true;
//agent is waiting for an acknowledge signal
//if an acknowledge signal is received from coordinator
    If(ack){
//agent send a recovery virtual setpoint signal
    inRecovery = true;
    thermSetPt = nextThermSetPt; virtualSetPt=true;
        }
    }
  }
```

Update function

The statements following have the purpose of determining how closely to the desired recovery end time (sel_rec_end_time) the actual recovery end time (meas_rec_end_time) occurred. This is embodied in the lag_constant value. The lag_constant value is the current best estimate of the time required to change the enclosure temperature from 4°C to 28°C The value of the lag constant variable is recalculated each time recovery ends to reflect changes in the thermal load on the enclosure.

```
private void updateLagConstant () {
   if (abs(thermSetPt – spaceTemp) < tempTolerance){
     double measRecEndTime = time; inRecovery = false;
lagConstant+=(measRecEndTime-selRecEndTime)/timeFraction;
  }
  }
```

4   Conclusions

Multi-controller system in general reflects the decomposition of the complex control problem. A complex control problem is divided into simple control problems and the

solution to each of these problems is implemented as an agent. Agents offer us as tools for solving control problems and organizing individual solutions. The agents are responsible for the initialization and finalization of their state variables, have knowledge about their operating regime and have an interface to coordinate its behavior with other agents of the system. They can be added, modified or removed from the overall multi-controller without redesigning the remaining system.

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Information Agents as a New Paradigm for Developing Software Applications in Database Systems

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Abstract. This work aims at giving new possible solutions combining an information agents architecture and database techniques in the management of information. We consider agents as powerful tools for handling the systems' complexity and very efficient to bring modularity in software development. Here is presented a case study of an agent-based architecture which uses information agents dedicated to the specific tasks of the business process management and other intelligent agents that will try to extract the knowledge from databases and to offer intelligent decisions.

Keywords: information agent, intelligent agent, database system, software development, multi-agent-based architecture

1 Introduction

This work is focused on designing a model of agent based systems which will bring information agents as useful tools in management process of knowledge collection in order to gain many advantages. Intelligent Agents are used for modeling simple rational behaviors in a wide range of distributed applications. Intelligent agents have received various, if not contradictory, definitions; by general consensus, they must show some degree of autonomy, social ability, and combine pro-active and reactive behavior [1]. First we discuss about software agents and databases, the architectures that support traditional DBMS modules; and the need to integrate agent techniques for the increase of the efficiency of knowledge. In general, Database Management Systems are known as passive systems that become active only in response to requests from end users or application programs. A possible approach is to make use of the information agent technology to add a reactive capacity to the system that enables autonomous activity and extensibility. Second we show a simulation that includes four information agents that support four different tasks taking inputs from the same source and giving solutions as suggested messages.

Finally, we conclude listing our contributions and comments for the future work.

2 The Research Objective

The research tries to show the relations between the agents and database techniques. We consider these relations very useful because we believe the agents make their job much faster and much better than other object.

Several interesting questions arise in connection with the current research: Can we find a good model which becomes widely used in database applications? Can we add new services by setting new agents without compromising the processing and time? Can we develop better solutions if we build a new model by combining agents and data mining in database systems? In light of these questions we started to develop an application simulating a business environment. We will note the performance of the system by observing agent behavior. The environment is a software component shielding the agents from details of the real world and providing the interfaces for perception, action and communication to the agents. [2] Modeling a software architecture is an essential step for the development of complex systems, including Multiagent Systems (MAS).[3] Ideal solution is a logical value chain with different components focused on providing the services required for handling time-variant information. [4]

3 Information Agents

An "information agent" is a software agent that is closely tied to a source or sources of data, as opposed to being tied closely to a human user's goals (so called "interface agents"), or the processes involved in carrying out an arbitrary task (so called "task agents").[5] In general such distinctions are necessarily part of a spectrum, but in this document we use the term "information agent" to denote a specific class of implemented agents with certain input/process/output behavior.[6] An information agent is an agent that has access to at least one, and potentially many data sources, and is able to collect and provide information obtained from these sources in order to answer queries given by users and/or other information agents (the network of interoperating data sources are often referred to as intelligent and cooperative information systems).

Fig. 1 Information agent utilization advantages

The data sources may be of many types, including, for example, traditional databases as well as other information agents. Finding a solution to a query might

involve an agent accessing information sources over a network or a database. Information agent is an autonomous computational software entity that is especially meant to provide a proactive resource discovery, and to offer value-added information services and products. It is capable to provide transparent access to one or many different data sources. [7] Figure 1 describes the advantages of using information agents as powerful techniques for gathering information and using it to make good decisions in a brief time.

4 Agents and Database Systems

The integration of both technologies would even increase the complexity of the system. It would be imperative to develop an architecture that is focused on finding one with a high level of abstraction that hides the complexity, with no direct consequences. The most powerful tools for handling things in software development are *modularity* and *abstraction*. [8] Agents represent a powerful tool for making systems modular. If a problem domain is particularly complex, large, or unpredictable, then it may be that the only way it can reasonably be addressed is to develop a number of modular components that are specialized (in terms of their representation and problem solving paradigm) at solving a particular aspect of it. In such cases, when interdependent problems arise, the agents in the system must cooperate with one another to ensure that interdependencies are properly managed.

In such domains, an agent-based approach means that the overall problem can be partitioned into a number of smaller and simpler components, which are easier to develop and maintain, and which are specialized at solving the constituent sub problems.

4.1 Architectures of Information Agents

There are three integration architectures between agents and DBMSs proposed: Layered, Integrated and Built-in(Figure 2). Each one of the three integration architectures has advantages and disadvantages.
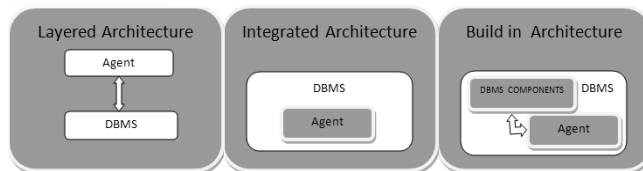
Fig. 2 Architectures for the integration of Agent Systems and DBMS

The Layered architecture is the one implemented in most of the existing approaches. An information agent is anything that can be viewed as perceiving its

environment through sensors and acting upon that environment through effectors. [9] An information agent is one that does the things like he percepts them, analyzes them and based on these it acts without remembering his history. A question is "how do we measure the efficiency of an agent?" Well it is very hard to make an agent to evaluate his performances. That's why the man is the one who establish a standard of what it means to be successful in an environment and use it to measure the performance of agents. The used architecture puts the agent between user interface and DBMS. Users are represented by their agents in the third layer. The purpose of the agents is to bring to the user individualized information and relevant messages as good as possible. To adapt its owner's information demand the agent collects message specific relevance evaluations given by its owner.[10] The agents communicate through messages and evaluate information giving solutions for the user. In the middle of the system there is an executive agent that has the role to facilitate the communication between agents. It has also the role to evaluate the performances of other agents and to accept or to reject the registration of an agent into the agency.

5 Case Study of an Agent Based System in Warehouse Databases

For this case study we use agent based architecture and tend to adapt it to the market environment. This architecture uses information agents well defined to act and to do specific actions of information management. The particularity of this architecture is the modularity: that means we can add other agents specifying the task first. They extract and offer information in real time which can be used to take advantages to make good decisions. The intelligent systems and especially agent based systems can offer the needed tools for expertise storing in a database management system.[11]

Fig. 3 The view of simulation

The case study will show that developing an agent based system on information management would be very useful. In a market environment of relationships between products, clients and sellers there is a continuous exchange of information where the main requirement is the guarantee of the high level of service performance.[12]

DFD description. Here we present the Data Flow Diagram of the agent based system. The system is based on database files which store all the data. The agency is included in the Administration Software. Each agent needs to perform action to discover changes in its environment. The agents can percept using queries (the action). The DBMS (data software) accesses between agents and database repository.
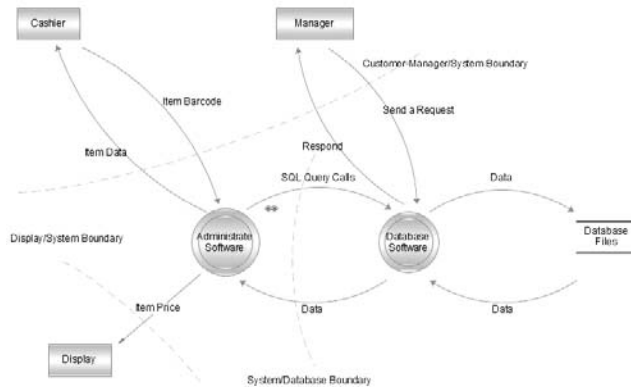
Fig. 4 Data Flow Diagram of the agent based system**.**

Through studying stakeholder requirements, we have detected four services which the agents can cover successfully:
1. Expertise of selling and inventory (selling agent)
   1. Display the changes of prizes (display agent)
   2. Expertise order amounts (order agent)
   3. Suggestions of prices (price agent)

We divide the module of Administration Software in these functionalities made by developing four independent agents. Figure 4 shows the data flow inside the system. The manager needs information in two modes: off-line and on-line. Each activated agent gives services and either offers suggestions on prices or makes orders by detecting alert zones for every record, or creates required reports, gives supply solutions, and even shows the points where human service is needed. For example, the visualization agent offers data to distribute in a network of displays taking a map of coordinates for each id_product.

The architecture. We use the layered architecture saving the modularity of the system. We think this is the best choice of three architectures in order to develop and integrate new agents without implicating the collection of autonomous agents with a particular expertise. For example we can add a data mining agent. It can use data that is already integrated. There are several actions that must be made before the data gets to the data mining agent. These actions are: data cleaning, data integration, transformation and pattern discovery. We will consider it in the future works.

Parameters to be calculated:

$$\text{Control\_parameter} = \text{Daily\_average(selling[i])} * \text{Expiry\_date[i]-Today)} - \text{Inventory[i]} \quad \textbf{(1)}$$

$$\begin{aligned}\text{Discount} = &\ \text{(Daily\_average(Selling[i])} * \text{Expiry\_date[i]-Today))} / \\ &\ \text{(Inventory[i]- Daily\_average(Selling[i])} * \text{Expiry\_date[i]-Today)}\end{aligned} \quad \textbf{(2)}$$

$$\text{Price[i]} = \text{Price[i]} * (1 - \text{Discount}) \quad \textbf{(3)}$$

The algorithm in the figure 5 is used to present one of the agents: price agent. We activate the agent even though it conflicts its definition of the autonomy.
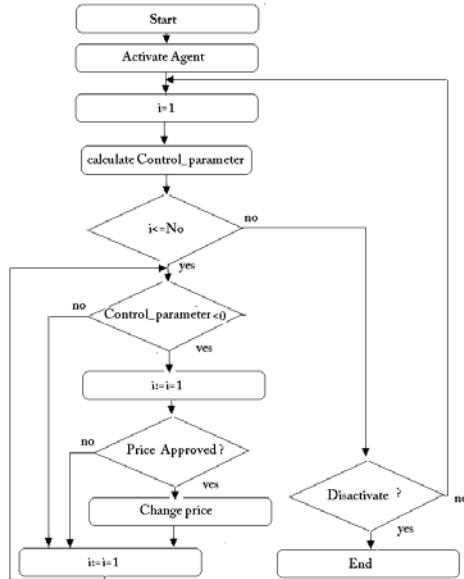
Fig. 5 Example of the price agent algorithm

The agent acts continuously asking the value of Control_parameter if it is positive or negative. The parameter is calculated by the agent using data gathered from the relevant records. (see formula (1)). The agent can discover its environment in a second manner of perception: action.[13] It sends requests to the DMBS and takes reports from the database for three variables from each record:
  1. Daily_average(selling[i])

2. Expiry_date[i]
3. Inventory[i]

The agent offers the new price but it can not decide for a new value confirmed. Here is the end of the agent task and the human operator can ignore or accept the decision of the agent. The system is not completely independent because there are many other factors that classify it as a critical system for the business.

The approach taken gives another agent framework and has a number of advantages coming from the artificial intelligence world and standard object-oriented architectures. The adoption of Java guarantees a widely available, well supported execution environment.

6 Conclusions

At the end of this paper we give some consideration:

- This paper presents a model of database system architecture that implements benefits of using agent techniques and database management system. In the process of studying different architectures, we have chosen the layered architecture in order to raise the level of abstraction.
- We use unique method to develop independent information agents where every agent has a specific task to complete. Agents act independently, nevertheless they can collaborate with users.
- We learned that distribution of functionalities to a database system can be resolved very well using the information agent as an easy way to support database services complexity.
- We have developed four information agents implementing the required functionalities. The results given from the execution of simulation confirm the validity of the model use.
- This work is important because it shows that intelligent agents will be the best technologies which will lead to significant improvements in the quality and sophistication of the software systems. The ability of agents to autonomously plan and pursue their actions and goals, to cooperate, coordinate, and negotiate with others, and to respond flexibly and intelligently to dynamic and unpredictable situations will expand their powerful use in many applications.

7 Future Work

Our architecture associates one data source with each information agent. This can be easily extended by having other agents increasing the system performance. There are several interesting tracks for future research:

1. We aim to implement a new proof of concept, because tool support is essential for the feasibility of the approach. Another similar direction would

be to have discovery style retrieval agents. This will also take care of the source failure case, which is not addressed in the current system.

1. Our future work will try to extend the modularity of system introducing intelligent agent to complete the goals of the agency, always using one central repository for the standardized, integrated, and validated data.

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Increasing Security by Disabling DML Statements to a dba User in Oracle Database

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Abstract. In this paper we present a new method to disable DML statements to a dba user in the Oracle database by managing sessions. Nowadays dba users have access to a lot of data even if they do not have legal permissions to see or modify them. With this method we can disable the ability to execute DML statements from every Oracle database user even if he has a dba role. The scripts that we have developed analyzes all database sessions, and if they detect a DML statement from an unauthorized user to a table or a view which should be protected then the execution of the DML statement is denied. Furthermore, these scripts do not allow a dba user to drop or disable the scripts themselves. In other words by managing sessions prior to the execution of an eventual dba user script, we prevent the execution of eventual DDL statements which target our scripts.

Keywords: Oracle database, dba, sessions, DML, DDL

1   Introduction

The electronic information is simpler to reuse and modify, so the future is going towards digital data. Sometimes we do not need to have a trace of changes that we made, and sometimes it is required to know the history of changes. This information can be stored in any database, but not all the database engines meet these requirements. The most important requirements vary to performance, security, user-friendliness or other. One of the best database engines which can meet these requirements is Oracle Database.

The user who has access to a lot of data, use these information even if they do not have legal permissions to see or modify it. They can benefit from these data, by modifying it.

Oracle database, like any other database, database administrator can grant permissions on any database object to a database to user, so some user has rights to insert data, some others to modify and some other user to modify it, but the DBA user has access on every database.

We are presenting a new method in this paper to disable DML statements to a dba user in the Oracle database by managing sessions, even if he has a DBA role.

2   Processes, Connections and Sessions in Oracle Database

All connected Oracle users must run two modules of code to access an Oracle database instance.

- ─ Application: A database user runs a database application (such as a precompiler program), which issues SQL statements to an Oracle database.
- ─ Oracle database server code: Each user has some Oracle database code executing on his or her behalf, which interprets and processes the application's SQL statements.

These code modules run by processes. A process is a "thread of control" or a mechanism in an operating system that runs a series of steps. (Some operating systems use the term job or task.) A process normally has its own private memory area in which it runs.

2.1   Multiple-Process Oracle Systems

Multiple-process Oracle (also called multiuser Oracle) uses several processes to run different parts of the Oracle code and additional processes for the users—either one process for each connected user or one or more processes shared by multiple users. Most database systems are multiuser, because one of the primary benefits of a database is managing data needed by multiple users at the same time.

Each process in an Oracle instance performs a specific job. By dividing the work of Oracle and database applications into several processes, multiple users and applications can connect to a single database instance simultaneously while the system maintains excellent performance.

2.2   Types of Processes

The processes in an Oracle system can be categorized into two major groups:

- User processes run the application code.
- Oracle processes run the Oracle database server code. They include server processes and background processes.

The process structure varies for different Oracle configurations, depending on the operating system and the choice of Oracle options. The code for connected users can be configured as a dedicated server or a shared server.

With dedicated server, for each user, the database application is run by a different process (a user process) than the one that runs the Oracle database server code (a dedicated server process).

With shared server, the database application is run by a different process (a user process) than the one that runs the Oracle database server code. Each server process that runs Oracle database server code (a shared server process) can serve multiple user processes.

Figure 1 illustrates a dedicated server configuration. Each connected user has a separate user process, and several background processes run Oracle.
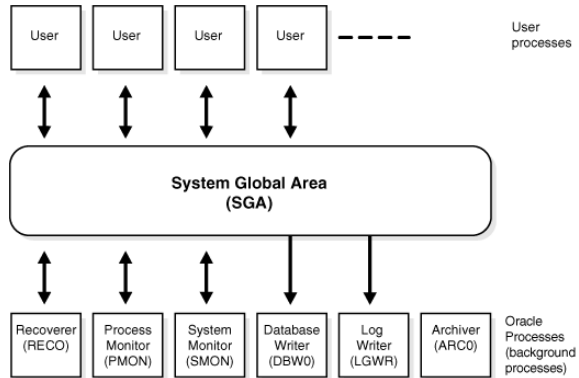
Fig. 1. An Oracle Instance

2.3   Connections and Sessions

Connection and session are closely related to user process but are very different in meaning.

A connection is a communication pathway between a user process and an Oracle instance. A communication pathway is established using available interprocess communication mechanisms (on a computer that runs both the user process and Oracle) or network software (when different computers run the database application and Oracle, and communicate through a network).

A session is a specific connection of a user to an Oracle instance through a user process. For example, when a user starts SQL*Plus, he must provide a valid user name and password, and then a session is established for that user. A session lasts from the time the user connects until the time the user disconnects or exits the database application.

Multiple sessions can be created and exist concurrently for a single Oracle user, using the same user name. For example, a user with the user name/password of SCOTT/TIGER can connect to the same Oracle instance several times.

In configurations without the shared server, Oracle creates a server process on behalf of each user session. However, with the shared server, many user sessions can share a single server process.

2.4   V$ Views

In Oracle database exist some V$ views which can give us information about the current state of all processes and sessions.

Table 1. Oracle V$ views, used for processes and sessions

View	Description
V$PROCESS	This view contains information about the currently active processes
V$SESSION	This view lists session information for each current session
V$TRANSACTION	This view lists the active transactions in the system
V$ROLLSTAT	This view contains rollback segment statistics
V$ROLLNAME	This view lists the names of all online rollback segments
V$SQLTEXT	This view contains the text of SQL statements belonging to shared SQL cursors in the SGA.

By using those views, we can see Oracle process detail as below:

```
select
    substr(s.username,1,18) username,
    substr(s.program,1,15) program,
    decode(s.command,0,'No Command',1,'Create Table',
       2,'Insert', 3,'Select', 6,'Update', 7,'Delete',
       9,'Create Index',    15,'Alter Table',
      21,'Create View',     23,'Validate Index',
      35,'Alter Database',  39,'Create Tablespace',
      41,'Drop Tablespace', 40,'Alter Tablespace',
      53,'Drop User',       62,'Analyze Table',
      63,'Analyze Index', s.command||': Other') command
from
   v$session     s,   v$process     p,
   v$transaction t,   v$rollstat    r,
   v$rollname    n
where s.paddr = p.addr
and   s.taddr = t.addr (+)
and   t.xidusn = r.usn (+)
and   r.usn = n.usn (+)
order by 1;
```

Here is a sample of the output, showing the individual command for each session:

```
   USERNAME            PROGRAM            COMMAND
```

```
------------------ --------------- ----------------
APPS              S:\ORANT\BIN\F5  Insert
APPS              f45runm@corp-hp  Update
PERFSTAT          sqlplus.exe      Select
```

2.5   Killing Sessions

Sometimes is necessary to kill some sessions for security reasons, performance reasons, or for some other reasons. The script below is used to kill a known session.

```
create or replace procedure kill_session(
               p_sid in number, p_serial# in number )
as
begin
    for x in ( select *
               from v$session
               where username = USER
                 and sid = p_sid
                 and serial# = p_serial# )
    loop
     execute immediate 'alter system kill session '''
               || p_sid || ',' || p_serial# || '''';
    end loop;
end;
```

3   Security in Oracle Database

An Oracle database user can execute queries, insert, delete, update DDL statements only on objects where he has permissions. He cannot retrieve results from any DML statement without the permission of the user who grants requested roles on these objects. DBA user can grant or revoke roles on any database object to any user.

Furthermore, if the audit is enabled in Oracle database, every SQL statement can be audited and the user does not have the permission to disable it.

So oracle database security is very well organized, whereas the DBA takes care about all users' rights.

What about DBA user? How can he be controlled by a security officer?

A DBA user has access on every object owned by another schema on the database, created by any user. He can modify objects like tables, views, triggers, etc by executing DDL statements, and he can modify data even if he does not have legal permissions to see or modify it.

Furthermore, nothing can be traced because DBA can execute DDL statements to disable audition process.

In the section below we developed a solution to this problem, by managing all database sessions.

4   Disabling DML Statements to Any User

In section 2 we described sessions, how we can monitor every SQL statement and how we kill sessions.

We must monitor every user session and analyze every SQL statements before they are executed, to prevent execution of any DML statement on some object.

We developed some scripts which can prevent any unauthorized user to execute DML statements over distinct database objects. These scripts monitor every user session, and if they detect any DML statement over some object which is protected by the scripts, it kills this user session immediately and do not allow the execution of these DML statements.

The scripts also analyze DDL statements, if a user with permissions to disable triggers, to drop package, to modify procedure, functions, etc, disables our scripts. By analyzing DDL statements, scripts can protect their self from any unauthorized DDL statements. So, if a user is trying to execute DDL statements on our scripts, this session is killed immediately.

All the DML and DDL statements are monitored if they are allowed to be executed. If not, the statements are immediately killed.

The package of those scripts also contains some tables and procedures.

Table 2. The package's objects

Object name	Type	Description
set_security	Procedure	This procedure enables and disables protection. Procedure password is required.
set_password	Procedure	This procedure change password. Old and new password a required.
reset_password	Procedure	This procedure sends an email to security officer with new password.
add_object	Procedure	This procedure defines a new object to be protected. Object owner, object type and object name are required.
remove_object	Procedure	This procedure removes an object from protection list. Object owner, object type and object name are required.
grant_permission	Procedure	This procedure grants permission on a protected object to a database user.

		Object owner, object type and object name, and user name are required.
		Start date, end date, start hour and end hour are optional.
revoke_permission	Procedure	This procedure revokes permission a database user.
		Object owner, object type and object name, and user name are required.
exp_killed_session	Procedure	This procedure exports all killed sessions. Start date and end date are optional.
security_object	Table	This table contains information about objects which will be protected
user_permission	Table	This table contains information about users which have permission over protected objects
p_config	Table	This table contains information about configuration, password, etc. data are encrypted
killed_sessions	Table	This table contains information about killed sessions
ddl_log	Table	This table contains information about every DDL statement executed by any database user

5   Conclusions

Our scripts diable DML statements from unauthorized users, even he has a DBA role. We are monitoring all sessions which causes the database performance to decrease slightly.

Even if the DBA can't execute DML statements on protected objects or DDL statements over our packages, he still can manipulate the data by genetrating some triggers to an authorized user. To eleminate this problem we insert every DDL statements into a ddl_log table which is part of our package.

The package must be installed to a user with sysdba role.

The scripts kill untrusted sessions during the protection of objects, but sometimes some SQL statements on those sessions must not be killed.

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GOVERNANCE, POLITICS
AND SOCIETY

Symbolic Reterritorialization and Governing the Communities: Raising the Serbian Landmarks for the 21st Century

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In this paper I wish to explore how globalization has challenged and changed the mechanisms of legitimizing national territory, on the case of Republic of Serbia. Following the idea that nation-state authority has to be manifested and legitimized territorially, I describe 'symbolical reterritorialization' as a process in which territorial authority is reaffirmed by erecting landmarks that transmogrify the image of national landscape. Describing examples of symbolical reterritorialization in post-Milošević Serbia I will show how, by endorsing concurrent engineering enterprises, different group identities are being subsumed under the idea of nation. Analysing how the projects appealed to different group identities, I will pay special attention to the music and music videos which formed part of the campaigns, as well as to the discourse which surrounded the campaigns in the daily newspaper. In order to perform this analysis, I will refer to the music and video material produced by the public broadcasting company (Radio Television of Serbia) and to the articles which were appearing in one of Serbian daily newspaper, *Blic*.

Most of the contemporary discussions regard nationalism as a cluster of modern ideologies which promote specific group identity, or deal with the issues of constructing the national identity and the role of different historical narratives in this process (see, for example, Anderson, 1993). In my study I will try to follow the difference between *ideology* and *technology* pronounced by Foucault (2007) and to conceptualize nationalism as a modern discursive technology of governing the population.[1] Speaking about discursive practices of "government of men", Foucault notices that this phenomenon "is not exactly, fundamentally, or primarily an ideology. First of all and above all it is a technology of power" (49). The shift between conceptualizing nationalism as an ideology and as a "technology of power" can prove helpful insofar it can lead our research in a different direction, and ultimately place emphasis on different social processes provoked by nationalistic discourse. Discussing nationalism as a social discourse that aims to model the field of power in a society, we come to the point to investigate the mechanisms by which this is made possible, and not only the features of resulting group or individual identities. In this sense, I would

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[1] In developing his theoretical framework Foucault did not have focus on nationalism. Zake (2002) applies Foucault's and Althusser's concepts in order to show how bio-power engages in the performance of nationalism as governmental technology.

argue that the process of the construction of national identity is inextricably (openly or clandestinely) linked with the process of forming the nation-state, as the most salient mechanism of power distribution (cf.: White, 2000). Every nationalistic discourse ultimately aims at creating, legitimizing or reshaping the nation-state, thereby directly linking the nationalism as an ideology with nation-state as the mechanism of power, and the national identity as both a sense of belonging to the nation and adherence to the (real or imagined) nation-state. From this perspective, I would like to point out to the pioneering work of Nikolas Rose and Peter Miller in the field of Foucault-inspired governmentality studies, who argue that identities themselves in fact represent a governmental technology which aims to "conduct the conduct" through the performance of the ostensive freedom of the individual (Miller and Rose, 2008).

Having in mind the nation-state as *sine qua non* of nationalism, I wish to approach the idea of 'homeland' as a salient issue in the construction of the national identity (cf.: Penrose, 2002). The idea of 'homeland' is engrafted in the understanding of the national territory, as the space that 'naturally' belongs to the nation, and which reflects the features of the specific nation within its character and appearance. While 'homeland' is defined as a *topos* in the nationalistic discourse, the notion of 'territory' can be conceptualized as space imbued with power relationship (Forsberg, 2003), and is thus directly involved in the performance of nationalism as a technology of power. Nation-state represents both the mechanism that transfers the idea of 'homeland' into national territory, and the mechanism whose existence and sustainability is dependent of the existence of the national territory as such. Two features of 'homeland' are particularly important when realized in the nation-state: its organic wholeness and its inviolability. Every part of the 'homeland' is perceived as if it represents the organic whole of the nation and inextricably belongs to the nation. Consequently, 'homeland' only makes sense when complete, and it is considered unacceptable to violate its wholeness. These features of the 'homeland' are apposite in the construction of the legitimacy of the nation-state, as the nation-state claims absolute sovereignty over every part of the national territory. As a result, we can claim that legitimacy of the nation-state is dependent on the identification of the 'homeland' with the *de facto* territory of the state, which is performed through the nationalistic discourse.

As Peter Miller and Nikolas Rose (2007) showed, processes of globalization proved pernicious to the purported sovereignty of the nation-state, which could no longer vindicate the government over the population defined solely in territorial terms. While national identity traditionally offers a unified model of an exemplary member of the nation invested with all the physical and psychological features considered of importance, it can not easily include different and often conflicting group identities which are defined in terms such as profession, lifestyle and, very often, music preferences. Diversification of the group identities is encouraged by the processes of globalization, which not only lead to greater mobility, but also provide the means of communication, such as the Internet, serving to promote seemingly communities unshackled by the properties of the real space. Also, communities defined on ethnical or religious bases could transgress the borders, and physical presence in the space defined as 'homeland' ceased to be key element in belonging to a certain nation, leading to the burgeoning interest of nation-state governments in diasporic communities.

However, as globalization challenged the existing mechanisms of governing the national communities, it also opened new opportunities, which led to the modification of the technologies of governing. The idea of nation had to be reformulated in order to encompass and not to conflict diverse group identities which were formed. This incited new governmental model of conducting communities, which are conceptualized in terms of multiple identities and shaped within seemingly borderless world. Pertaining the idea that nation-state authority still has to be manifested and legitimized territorially, I describe 'symbolical reterritorialization' as a process in which territorial authority is vindicated by erecting prominent landmarks. On the one hand, these landmarks have to be cogent in the real presence and to utterly transform our experience of the space, while, on the other, their images must be recognizable and suitable to be globally transmitted. In this way, symbolical reterritorialization represents mechanism of legitimizing the power-network of the nation-state which is pliable to the vicissitudes of the globalization.

Symbolical reterritorialization proved a salient feature of post-Milošević Serbian governmental politics, not least because Kosovo crisis had divested the state of control over a part of its purported territory, undermining its overall territorial authority. Namely, following the 1999 NATO bombing of Yugoslavia (from 24th of March to 11th of June 1999), Military Technical Agreement (also known as Kumanovo Treaty, 9th of June 1999) and United Nations Security Council Resolution 1244 (10th of June 1999), Serbian military and police made a withdrawal from Kosovo, and Serbian government ceased to exercise its authority over this territory, which it regards as its autonomous province 'Kosovo i Metohija'. In the course of development, Kosovo pronounced its independence and is governed as a separate state. As already pointed out, the key feature of 'homeland' is its inviolability, as it represents the organic whole of the nation. Consequently, the exclusion of Kosovo from the sovereignty of Serbia removes the aura of the 'homeland' from the Serbian nation-state, questioning its legitimacy. Therefore the unremitting campaigns of the Serbian government to retain the excluded Kosovo under its formal sovereignty should be construed not only, or even not primarily as a part of the project of regaining the lost territory, but as legitimizing its current status. Indeed, as an array of commentators noticed, these campaigns are being heavily exploited in the realm of internal affairs and daily politics.

> In the course of this paper I will point out to three enterprises of erecting landmarks that were initiated or resurged in the 2000s as the examples of the symbolical reterritorialization: building of the Temple of Saint Sava in Belgrade, reconstructing Avala TV Tower, and restoring the monastery Đurđevi stupovi (The Tracts of Saint George). Government endorses all three projects and undergirds the fund raising campaigns using different mechanisms. Unlike the Temple of Saint Sava, which represents a multi-decade project, the other two enterprises have been initiated after 2000, in the period of the described breach of legitimacy. In comparing these three projects, I will show how diversification of the enterprises corresponds to the surge of conducting nationalistic discourse through governing the communities.

In the case of Serbia, as well as whole South-Eastern Europe, nationalism has been linked to ethnicity and religion. This results in envisioning the landscapes through categories of ethnical belonging and through religious, namely Orthodox Christian monuments. The Temple of Saint Sava in Belgrade is heavily invested with the traditional insignias of Serbian national identity. Saint Sava is considered to be the founder of the Serbian Orthodox Church and the temple is being built on the location associated with burning of his remains in 1595 by the Ottoman Empire's authorities, wherefrom it dominates Belgrade's cityscape. The first ideas of erecting the temple on this site date back to the beginning of the twentieth century, with two architectonic competitions from 1906 and 1926, and the realization of the project regains impetus in the 80's when, in un unprecedented feat of engineering, it starts dominating the Belgrade landscape (Bogunović, 2005). After 2000 Serbian government starts openly to endorse the project of completing the Temple. Prime minister Zoran Đinđić played especially prominent role, encouraging private companies to sponsor the project, and stating that project should be completed in a year or two "no matter how much money is required" as it is "meagre comparing to the national gain we shall acquire once the Temple is completed" (Anon., 2001). The works done on the Temple during the 2000s made its appearance even more cogent in the Belgrade landscape: the Temple was decorated with white marble, provided with heavy night lightening, and, importantly, it was invested with a set of church bells which empowered its presence in the Belgrade soundscape as well. However, the open governmental endorsement of financing also provoked insurgencies. Commenting the government decision to issue obligatory charity postal stamp in the period between 11th of January and 8th of July 2006 for the competition of the Temple, sociologist Zoran Stoiljković opined that this might not be the right way to assist this enterprise, as citizens of Serbia belong to different religions, as well as encompass atheists (Anon, 2006).

Reconstructing Avala TV Tower and restoring the monastery Đurđevi stupovi are two enterprises which are not only specific for the 2000s as being new projects, but also because of their purported connection to the issue of Kosovo. Avala TV Tower was originally constructed between 1961 and 1965 and represented the tallest structure in the Balkans, located on the outskirts of Belgrade. It was destroyed in the NATO bombardment of Serbia in 1999, on 29th of April. The campaign to reerect the tower, which commenced in 2004, was wrapped with the ethos of repulse and counteraction toward the NATO bombardment (cf.: Anon, 2010), and the very act of rebuilding was to symbolise the annulment of the consequences of the action, the most serious being the secession of Kosovo. Monastary Đurđevi stupovi is neither located in Kosovo, nor was devastated in the Kosovo War. It is an Orthodox monastery located in the south-western Raška region of Serbia, built in the late 12th-century by the medieval Serb nobleman Stefan Nemanja who also founded the main Serbian medieval dynasty Nemanjić and later became canonized as an Orthodox Christian saint. The monastery has been in ruins roughly since the end of the Great Turkish War in the late 17th century. The thorough project of rebuilding the monastery commenced in 2001. However, the monastery

belongs to the Serbian Ortodox Diocese of Raška and Prizren (which compromises the swath of land in south-western Kosovo and south Raška) and the rebuilding is concurrent with the rebuilding of Serbian monasteries devastated in Kosovo insurgencies. Moreover, the diocesan Artemije who initiated the rebuilding of Đurđevi stupovi in Raška (Serbia) had also tried to avert the sacred objects rebuilding efforts in Kosovo, as being performed under the jurisdiction of purportedly independent state. Finally, the very discourse of medieval history, and especially the Nemanjić dynasty, presents the backbone of the Serbian 'historic' argument of Kosovo as the part of the Serbian 'homeland'. Following these arguments, the rebuilding of the Đurđevi stupovi can also be construed as connected to the issue of Kosovo.

These two enterprises appeal to different communities subsumed by the notion of Serbian ethnicity, thus expanding the monolith model of national belonging, in order to encompass the diversified group identity formation in the globalized world. The funding mechanisms of these projects are also novel, in so far they produce semblance of private or non-governmental initiative as the main resource. This became especially overt in the case of Avala TV Tower, where Radio Television of Serbia (RTS) broadcasted series of live TV shows featuring SMS donations from the audience. However, in both campaigns public companies, and RTS as the public broadcaster, played a prominent role.

Music videos used in the fund raising campaigns give the most significant clues to the way different group identities, defined in terms of musical preferences and lifestyle, are made susceptible to these projects. Music video "Podignimo toranj na Avalli" ("Let's Raise the Tower at the Avala") used for the promotion of the rebuilding of Avala TV Tower, produced by RTS, features an elder rock star Bora Đorđević (leader of the rock band Riblja Čorba) and a drummer Dragoljub Đuričić, who were both openly critical towards the Milošević's regime in the 90s, as well as a younger star Željko Joksimović who owes the bulk of his fame to the 2004 Eurovision Song Contest. The scene itself is the place of the former TV tower ruins. The music is composed by the Kornelije Kovač, well-known pop and rock composer, and it fuses important features of rock, thus appealing to the urban, young and middle-aged population (cf.: Cvetičanin, 2007; Dragićević-Šešić, 1994). Music for the promotion of monastery Đurđevi stupovi has been produced by the specially formed music group *Stupovi* (suported by RTS) and so far compromises three music videos, "Podignimo Stupove" ("Let's Raise the Tracts"), "Lazi, Lazo, Lazare" and "Hristos voskrese" ("Christ has Risen"). The videos are staged in monasteric or sacred-like surroundings, and the texts of the two latter songs are themselves paraliturgical. Music belongs to the new burgeoning music genre of ethnic (Serbian) music, featuring arrangements of folk-like tunes modelled after world music production. Although this music genre gains broad appeal in Serbian public, it is more orientated toward religious, traditional public, including elderly members of the audience and rural population with penchant towards folk tunes arrangements.

Comparison between the campaign for building the Temple of Saint Sava and the projects of rebuilding the Avala TV Tower and monastery Đurđevi stupovi show significant shift in the strategies of symbolical reterritorialization, which can be construed as a mutation in this governmental technology due to different mechanisms of identity formation in the globalized environment. Music used in the latter two campaigns communicated with the different Serbian communities, but also managed to subsume their group identities under the notion of nation. Although different musical styles have been present which should correspond to different group identities and different ideologies, the same state apparatus propped both productions (cf.: Scherzinger, 2005), and they can ultimately be perceived as parts of the same mechanism of government aiming to legitimize the territorial authority of the Serbian nation-state. In both campaigns the level of the state involvement was undisclosed, and the resemblance of private initiative and funding was created. The possibilities of broadcasted fund raising campaigns also appealed to the diasporic communities which actively participated in funding and whose involvement can prove germane to the understanding of the new governmental technologies (cf.: Bernal, 2010).

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Nationalism and democratization in post-communist transitions: development of an analytical model

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Post-Cold war transitions in CEE/SEE are associated with democratization processes while they also involve 'spectacular reconfiguration of political space along national lines'(Brubaker,1996). Phenomena of nationalism constitute an important part of many post-communist transitions and, hence, of democratization processes. Nationalisms, thus, both shape and are 'reframed' by the transition-to-democratization processes. The relationship between nationalism and democratization, however, cannot be straightforwardly characterized. In transitology and nationalism studies it remains a controversial point both theoretically and empirically. Depending on the circumstances nationalism and democratization can form compatible or conflicting logics (Linz & Stepan,1996).

Some post-Soviet regional studies indicate at the converging processes of national(ist) mobilization and democratization and stress that national revivals and nationalist movements provide feasible democratic alternatives to Soviet 'imperial' order(Bessinger,1996). Mentioned is also the positive role of nationalisms in nation- and state-building processes. Conversely, when adopted by former communists in support of their clinging to power, nationalism is in conflict with democratic forces and thwarting democratization (Snyder, 2000).

A pertinent question then is whether it is possible to conceptualize the post-communist nationalism-democratization relationship going beyond any particular case? The paper addresses it by elaborating an analytical model of the relationship. The approach is a combination between formal/deductive and theoretical/inductive modelling as described by Duverger (1999). The model depicts the sequential interactions between nationalism and democratization and outline factors that influence it. It is argued that character of nationalism-democratization relationship is related not only to different stages of democratization as a process, but also to functional changes within nationalism. Drawing on Rustow's (1999) dynamic model of democratization the model studies the *national unity* as a single background condition and appearances of nationalism in various phases.

The model-building starts by conceptualization of nationalism and introduction of the dynamic model of democratization. Nationalism can be understood as a sentiment/feeling, as a normative worldview, and as politics(Figure1). Since democratization is primarily a political process, nationalism-as-politics is the most appropriate understanding for studying nationalism-democratization relationship.

Figure1.Nationalism: understandings, 'roles' and areas of knowledge
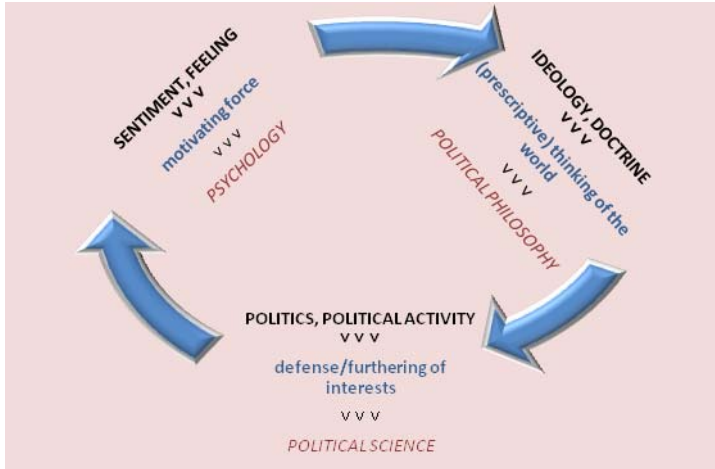
Nationalism-as-politics is defined by its agency and the problem area of its goals. Ideologically nationalism perceives the state as an embodiment of the nation and source of latter's political and social power. Since it presumably acts *in the name of* and *on behalf of* the nation, state appears a major actor of nationalism-as-politics. An active nationalist movement aiming at 'defending the nation'[2] is also an important agent of nationalism, as well as a political organization of a minority. According to Bessinger(1996) the goals of nationalism consist of 'definition and redefinition of physical, human or cultural boundaries of the state.' Nationalsim, hence, is 'political activity that contests certain crystallization of physical, human or cultural boundaries of the state'(p.54) where boundaries are defined by considered-as-politically-relevant and relatively constant populational differences within the state and populational similarities outside the borders. Consequently, claims over territories are also part of nationalism-as-politics.

Hence, nationalism-as-politics comes to three interconnected problem areas related to population's character and identity, attitudes and politics towards populational heterogeinity within and populational similarities across state borders and consequent

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[2] Because of apprehensions that the state 'is not good enough' at doing it.

territorial issues (Figure2). Since their gist remains relatively constant over time[3], the goals of any nationalism are rather permanent. Yet, the kernel of any particular nationalism can be subjected to revision, even altered in periods of profound transformations like the post-Cold war ones. It is the aim of the suggested model to provide an account of these transformations of nationalism in the course of democratization.

Figure2.Problem areas of nationalism–as-politics

Terminologically and as a phenomenon, 'democratization' derives from 'democracy' and means a *process towards* democracy, i.e. transformation of the political system and form of government from non-democratic to democratic by implementation of values, practices and elements of democracy. This happens in two ways: inclusion/increase of participation (increase of percentage of citizens who possess and can excercise political rights) and liberalization/increase of competition (increase of opportunities for political opposition and competition for political positions) (Linz & Stepan,1996).

Democratization is a long-term, dynamic, open-ended process passing though several stages shown in Rustow's dynamic model (Figure3). No other conditions are stipulated but a single background condition–national unity that should preceed democratization. That means that 'the vast majority of citizens in a state should not have doubts about where they belong politically' (Rustow1999).[4]

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[3] As long as composition, territorial arrangement of population and/or state borders remain unchanged.

[4] This does not preclude the existence of ethnic or other cleavages among population but if they put into question national unity, that problem should be solved in order to make democratization possible.

Figure3.Rustow's dynamic model of transition to democracy

Background condition national *un*

1. Preparatory phase *disintegration of undemocratic regime*

2. Decision phase *establishment of democratic order*

3. Habituation phase *further development of democracy and its embedding into political culture*

Time axis
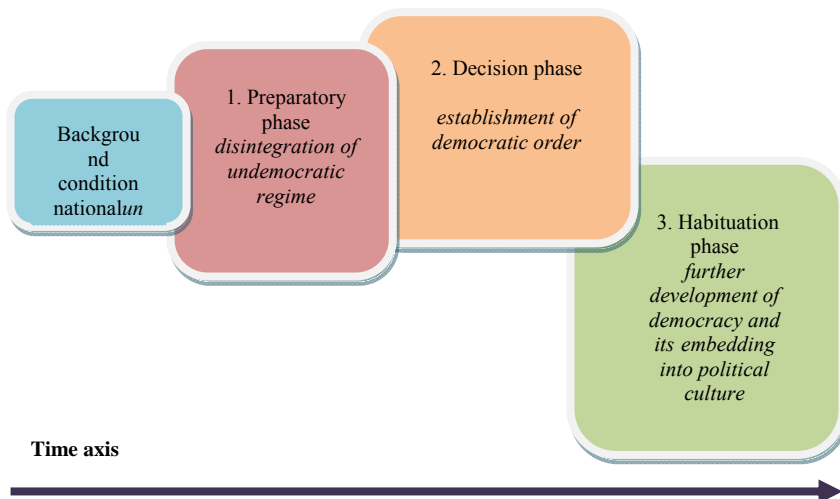
Source: Sorensen1993,p.40

The <u>preparatory phase</u> is 'a prolonged and undetermined political struggle' that puts into motion the dynamic processes of democratization. Liberalization usually occurs here and leads to opening a space for opposition political activity and competition. In the <u>decision phase</u> 'political leaders took conscious decisition to… institutionalize some vital aspects of democratic procedure.' Since decision-making amounts to making a choice, democracy is also a matter of (political) choice 'in a process of consious decisions by political leaders' (Rustow, 1999). All political actors and society as a whole ultimately should also get accustomed to that decision. This is done in <u>the habituation phase</u>. According to Rustow (1999) 'once taken, a decision, although not liked by all, becomes more acceptable when you live with it'.

It should be noted that 'there is no historical law that determines the transition process as the natural order of things' (Sorensen, 1993, p.45). Many times states oscillate between forms of non-democratic regimes and fragile, unstable democracies without reaching habituation and consolidation phases. Democracy, thus, is neither inevitable nor guaranteed or necessary (Schmitter, 2004, p.60), but is a matter of multiple factors: subjective and structural, internal and external amongst which political will for democratization holds an important place as CEE/SEE transition processes persuasively demonstrate.

The model of democratization-nationalism relationship connects nationalism-as-politics to different phases of democratization process. The model's background condition states that beforehand it should be clear who the *demos* are, i.e. already existing legitimate political unit/community is needed (Schmitter, 2004, p.68). Thus, democratization necessitates the solution of the question about nation (Sorensen, 1993, p.41), and nationalism remains the predominant principle in establishing nations' limits.

The background condition is not unproblematic. First, national unity is not constant, but varies in time. It changes as a result of democratization processes while also influencing them. Furthermore, as Schmitter (2004) rightly observes 'unfortunately it is not always clear what is nation-before, during or even after the democratization'(p.68). Besides subjective feelings of belonging, nation is defined also through political decisions, i.e. *someone* decides it and that is amongst the most decisive choices in many cases of CEE/SEE democratizations. Consequently, a third problem is the uncertain meaning of 'vast majority', i.e.how many suffice for it and what happens with those who are not in it.

Because of these problems the background condition of democratization needs to be further detailed by introducing two specific aspects of national unity—its scope and its intensity, i.e. the idea that different parts of the population feel with different strength their bond and belonging to the political community. Intensity of national unity is additionally outlined by a combination of two factors- the level of development of national identity and the degree of mobilization of this identity at a particular moment(Figure4).

Figure 4.'National unity' as a pre-condition to democratization

Strong pre-existing feeling of national identity leads to higher intensity of national unity as precondition to democratization. Degree of mobilization depends on perceptions of internal/external constraints and/or existence of shared goal within the community at a particular moment. The scope depends on the existence and nature of significant cleavages within the society, as well as on perceptions of equality/inequality of groups. If a country's population is largely homogen ous, scope of national identity is presumably higher than in a country with sizeable minorities. Table 1 exemplifies combinations of levels of intensity and scope of national unity.

Table 1.Intensity and scope of national unity: examples as of 1989/1990

SCOPE	INTENSITY		
	High	Medium	Law
Large	Poland, Slovenia	Czech republic, Hungary	Albania
Medium	Lithuania	Bulgaria, Romania, Ucraine	Belorus, Uzbekistan
Small	Latvia, Estonia, Croatia	Moldova, Slovac republic, Macedonia	Kazakhstan

The table reveals national unity as momentary condition since both its intensity and scope are changeable. Decomposition of national unity indicates its important and complicated implications for democratization processes. The degree to which this precondition is fulfilled predetermines consequent advancement of democratization. A relatively higher intensity and relatively lower scope of national unity in the beginning of democratization lead to more intense presence of nationalism-related issues in the transformation processes.

The model building continues with examination of the nationalism-democratization relationship in the ***preparatory phase*** when it becomes possible for diverse actors to put forward various nationalism-related concerns. Figure5 shows major issues that determine the relationship in the initial opening:

Figure5:Determining the nationalism-democratization relationship in preparatory phase
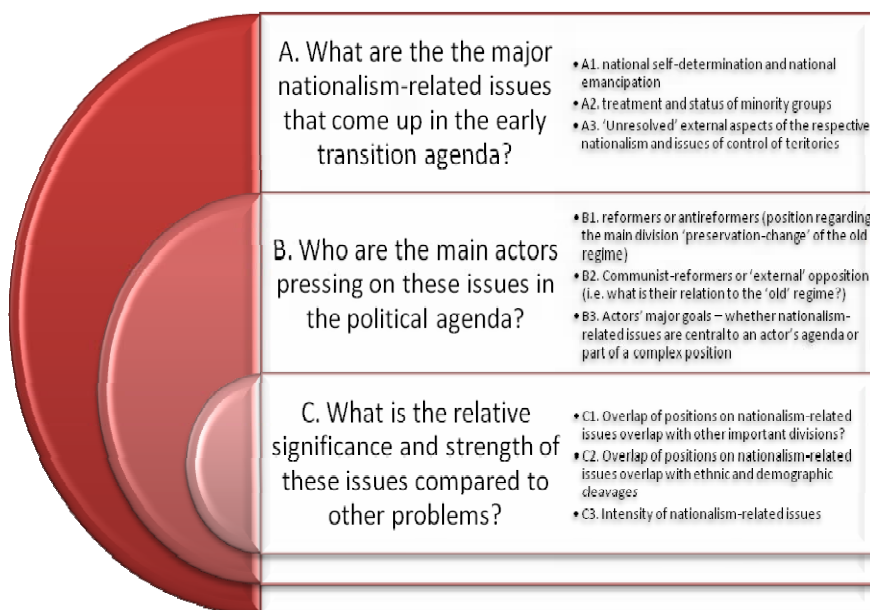
National self-determination(**A1**) in most cases is about achievement of sovereign statehood of federative units, i.e. redrawing of political borders along 'more national' lines. However, it can also be understood more broadly – as national emancipation 'from either an oppressive regime, or from Soviet dominance, or most often from both'(Harris2002,p.13). Obviously there is a strong link between nationalism and democratization here because appeals and struggles for national emancipation can concur with calls for further democratization. The initial opening also allow the expression of dissatisfaction about insufficient respect for distinct identity (attempts at assimilation) and/or unequal/discriminatory treatment of a minority(**A2**). This can be indicative of problems with both dimensions of national identity, but also represents a critique against the communist regime and thus it too provides an argument for the regime change. Also, it is the initial opening that oftentimes thrusts forward claims and expressions of negative feelings related to cut-off territories considered as 'one's own' because of historical and/or demographic reasons(**A3**).

These answers lead to the question of how do these issues 'enter' the transition agenda and who puts them forward. East-european transitions show that these could be

reformers from within the communist nomenclatura, dissidents, minority speakers, local elites, etc. What defines these actors in regards to the nationalism-democratization relationship is their position about the main division within the transition; are they for or against the change?(**B1**) This pertains to the problem whether actors can instrumentalize nationalism for the achievement of other goals and thus indicates whether nationalism and democratization would form a compatible or incompatible logic. Actor's relation to the 'old' regime(**B2**) affects the issue whether positions on nationalism-related issues would overlap with positions pro/against democratization. Important is also the place of nationalism-related issues within an actor's overlall agenda at a particular moment and in time(**B3**): whether they are central (like sovereignity for the pro-independence part of the communist elite in the Baltic republics) or are relatively side-lined compared to other issues (like the issue of Macedonia for Bulgarian communist reformers).

The third key question defining the nationalism-democratization relationship concerns the relative intensity and significance of the nationalism-related issues compared to other transition topics. Overlaps of issues of nationalism with other important issues are crucial for the nature of the relationship (**C1**). The greater the overlap, the greater is the probability (and actors' temptation) not only to press issues of nationalism *per se*, but also to use them as a legitimation means and gathering of public support for other issues unrelated to nationalism. The overlap of positions on nationalism-related issues to ethnic-demographic cleavages suggest another correlation(**C2**)-the greater is the overlap, the more probable it is that the political community is split along that cleavage. In such cases even if previously existing, national unity is put in question (Rustow, 2004) and its influence as a background condition to democratization is diminished. The intensity of the nationalism-related issues(**C3**) bears on the way these issues 'enter' the transition agenda, which predetermines the role these issues would have for the demarcation of the major lines of opposition in the preparatory phase and the 'positioning of powers' along these lines.

The answers to these questions reveal the potential of nationalism-related issues to obstruct already at that phase of transition further processes of democratization. The specific answers are time-bound, i.e. they can change in time as a result of internal dynamics and external influences. The relationship of nationalism and democratization in the preparatory phase shows the direction of its development in ***the desicion phase***. In this phase nationalism on the one hand predetermines the political agenda, while on the other the restructuring of political space, redefinition of political players and introduction of new rules of political action institutionalize nationalism in particular forms turning it into part of the new political organization and practice(Figure 6). Nationalism as developed in the initial opening and preparatory phase takes part in setting the agenda by prioritizing certain issues and positioning political and social actors according to their attitudes to nationalism-related issues.

Figure 6.Desision phase:Nationalism as a prerequisite and as an outcome
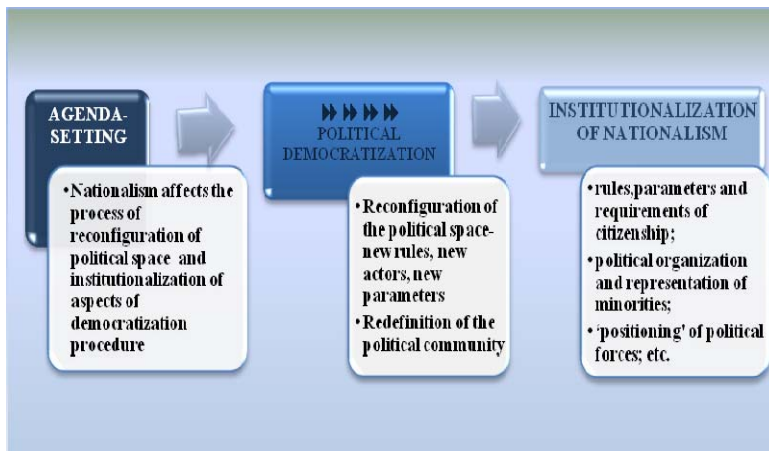
The main question in this phase regarding nationalism-democratization relationship is 'what is decided?'. The answers follow from the nationalism-democratization interaction in the preceeding phase in each case. If in the preparatory phase the main nationalism-related issue was about national self-determination and achievement of sovereign statehood, one of the major decisions is about secession from a federal state and proclamation of a sovereign state.

In this phase also decisions are taken about the delineation of the political community, i.e. insiders and outsiders and implications for people's rights and political participation. Such decisions presume the definition of 'us' (insiders) and 'them' (outsiders) and imply setting of principles for minority treatment and minorities' political participation. These all are legally codified in normative documents and appear in political and public discourses.

One of the major decisions concerns the nature of nation and statehood. In terms of their constitutional design many of the new/amended constitutioins in ethnically heterogeneous countries conceptualize nation predominantly in ethno-national and/or cultural terms, and not in terms of citizenship and territory. This 'constitutional nationalism'[5] expresses itself in arrangements and symbols that are difficult (even impossible) to negotiate and compromise: character of state (unitary, federal, autonomous regions), national anthem and flag, national holidays, official state

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[5] The term is coined by R.Heyden quoted in Robotin&Salat,2003.

language and the status of other languages/mother tongues. Decisions on such issues may restrict the abilities of certain groups to recognize the state and its symbols as 'theirs' and associate with them.

The regime change also brings for the increase of citizens' political rights and political participation. Decisions on such issues in principle institutionalize various aspects of the democratic procedure, but they can in practice restrict the participation and scope of rights of specific groups of population because of their differences from the majority. Restrictions vary: from exclusion from citizenship and denial of political rights to limitation of political participation or restriction of opportunities to express and reproduce their identity. In such ways certain form of state nationalism is institutionalized, which – unless reaction appears from the affected population or from external factors because of violated democratic principles – can become part of the new country's organization.

The building of electoral systems which is an importnat aspect of democratization processes, can also lead to reframing of nationalism (Brubaker1996) by rearrangement of political space and regulation of opportunities for political representation of different interests (including those on ethno-national basis). The shaping of party systems represents the most conspicuous part of the institutionalization of nationalism in this phase. If division of positions on nationalism-related issues coincide with significant ethno-national and/or religious cleavages, such divisions can exert significant influence on interst aggregation and party formation.

Definition and attribution of a set of minority rights to address a minority group's ability to express and reproduce its different identity can also become part of the institutionalization. Minority rights potentially answer minority claims and concerns and thus subdue minority nationalism. Nevertheless, ruling elites can create and impose political and public discourses that reassert the logic of national state in terms of a state for and of a particular (ethnocultural) nation and thus induce both minority nationalism (despite minority rights) and anti-minority majority nationalism.[6]

Thus, in desicion phase nationalisms set the agenda of decision-making and affirm division lines among major actors on nationalism-related issues. However, rearrangement of political space, redefinition of political actors and introduction of new principles and rules of political activity and participation put nationalism in new institutional frames thus turning it into part of the new political arrangements and practices. Structure of political composition, characteristics of party and electoral systems, as well as positioning of major political forces in regards to nationalism-related issues (i.e. existence of large and strong nationalistic parties of the majority, number and size of minority parties, positions of major political forces on these issues) determine the characteristics of this institutionalized nationalism.

The incompatibility of this institutionalized nationalism to essential democratic rules

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[6] Republic of Macedonia –both before and after the Ochrid agreement- provides a pertinent illustration of such a case.

and procedure varies (in time and across countries). It often becomes a characteristic of the transition regime and an obstacle for consequent establishment and consolidation of democracy in a given country. Existence of strong internal reaction to that institutionalized nationalizing nationalism (Brubaker, 1996) on the part of affected groups can stop the process of democratization or even reverse it back to some less democratic procedures and practices. Hence, non-democratic elements resulting from the institutionalization of nationalism could thwart democratic consolidation in the long run and pose problems or even make impossible the ***third/habituation phase***.

The model clearly shows that it is not possible to establish a simple one-way causal relation between nationalism and democratization. Instead, the study of the interaction as a sequential process makes it possible to outline the ways in which the logic and practice of various stages of democratization and nationalism-related issues interrelate and mutually influence each other. The model permits the formulation of a number of hypotheses about the nature of the interaction of nationalism and democratization processes and its development in time that can be tested in partical case-studies. It indicates tendencies in the development of nationalism-democratization relationship and suggests that the interaction of nationalism with democratization depends largely to voluntaristic and contingent factors despite the existence of structural factors and predetermined circumstances.

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The impact of restorative justice and plea negotiation process on victims' rights

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1. Introduction

Victims' rights are becoming one of the most important concerns of the contemporary criminal law and criminal procedure law. A special criminological discipline was founded in the 1960s named *Victimology* aiming to study the special features of victims of crime and to call for a better position for the victim in the criminal procedure having in mind the high rates of secondary victimization caused by state institutions as well as the repeated victimization caused by the perpetrator. Very important international principles and guidelines have been passed by worlds' most important international organizations such as the United Nations and the Council of Europe, in order to establish some standards regarding the treatment of victims of crime. International criminal tribunals have also achieved to incorporate special rights for the victims in the process of delivering justice for the most severe international crimes. Despite the fact that all international provisions that deal with victims' rights currently represent only what international law specialist call *soft law*, the raise of the awareness regarding the need to have better defined and efficient rights for the victims is undisputable.

The internationally recognized and basic rights of victims of crime[7] are the following:

- Access to justice and fair treatment,
- Restitution,
- Compensation and
- Assistance.

This article will tend to explain the ways in which the rights enumerated above can be implemented through the concept of restorative justice, including as well its theoretical

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[7] The enumerated rights are promoted in the UN Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power (1985), as well as in numerous recommendations of the Council of Europe.

and legislative definition. Having in mind that the countries of the Balkan region lately tend to include the restorative justice concept in their legislation, a closer analysis of it will prove that this concept represents a very important way of implementing victims' rights in the judicial process.

On the other hand, in their way of reforming the national penal legislation, some of the countries in the region include some specific institutes of the common law system such as the plea negotiation process. This article will closely analyze the impact that this process has on victims' rights and will tend to explain through theoretical arguments as well as comparative analyzes that the process of plea bargaining represents a real threat to the newly incorporated and fragile victims' rights.

2. Creating restorative justice

The main features of criminal law tend to preserve their classical approach when the aims of the penal sentencing are discussed. Thus, most of contemporary theories make a dual distinction among *retribution* as a separate and ancient aim of the penalties that tends to make the perpetrator suffer for the committed crime, and *prevention* (or *reduction*) on the other hand, as an aim to prevent the perpetrator to commit the crime again (special prevention), as well as to prevent other persons from committing crimes (general prevention). *Re-socialization* has also been included as the third aim of penal sentencing in order to help the convicted persons to make their way back to the society and be able to live as law abiding citizens once they have served their sentence. These three aims are clearly structured in the Criminal Code of FYR Macedonia (art. 32).

Sanders and Young (2007) argue that the current systems of punishment often fail in their way of ensuring the three above mentioned aims. Therefore, according to them a "radical proposal" would be to replace this system "with that of restorative justice in which offenders would be held accountable to victims for the harm done to them… through a process of mediation" (p.441). Emphasizing the need for restorative justice in order to establish justice between the offender and the victim represents a major change in the theoretical development of the criminal law. Furthermore, it should be marked that the restorative justice system cannot fully replace all other aims of punishment, but it surely needs to be enumerated as the fourth of the above mentioned aims (*Restitution*). In that way, the victim can be included as an actively participating subject in the criminal procedure, rather than continuing to hold her traditionally passive role, especially in the adversarial system[8].

It must be emphasized that the first three aims mentioned in the previous paragraphs (retribution, prevention and re-socialization) include only two subjects: the state and the offender, whereas the fourth, still to be, aim of the criminal punishment

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[8] As explained elsewhere (Arifi *et al.* 2008), the victim in the common law countries (which have adversarial criminal procedure) has an essentially more limited role compared to the victim in civil law countries.

(restitution) includes also the victim. This can be visualized through the following scheme (Table 1):

Table 1: Subjects included in the aims of punishments

State ⟺ **Offender**	**State** **Victim** ⟺ **Offender**
Retribution, prevention and re-socialization	Restitution
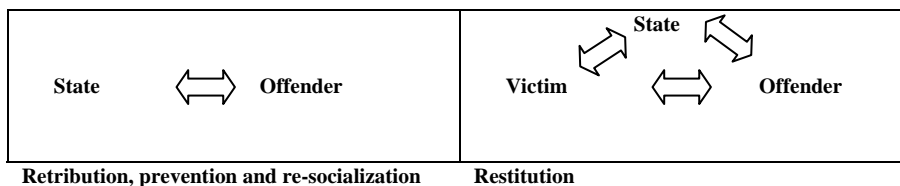
The restorative justice represents a very interesting way of resolving conflicts through actively involving all the parties of that conflict. Thus, Doerner and Lab (2002) emphasize that "[t]he community, the victim, and the offender all need to be intimately involved in dealing with the problems and solutions" (p.354). These authors explain the process of restorative justice through the following statement:

> Under this approach, victims are compensated through restitution, are given a voice in the case handling, and become an integral part of the treatment or intervention provided to the offender…The offender makes amends and is assisted in order to mitigate the chances of future deviance… The community is expected to assist the victim, work with the offender and seek to eliminate causes of crime. Finally, the government… is to provide fair and equitable procedures for all parties… In essence, restorative justice seeks to bring all parties to the table in a mutual assistance pact (p.354).

This approach is shared by Wolhuter *et al.* (2009) who also mention the three subjects (victim, offender and community) as "stakeholders" who need to find a compromise for an unresolved conflict "in order that its' past effects may be addressed" (p. 215).

The finding that unites the mentioned authors is that the process of restorative justice gives the victim a specifically proactive role and fully involves them in the case, offering them possibilities to achieve compensation as well as to make their point of view clear in front of decision making institutions. This way of involving the concerend subjects of the conflict in its resolution is usually reached through the use of alternative punishments, such as compensation orders and community service orders as well as through the use of mediation in criminal cases.

Mediation has been included in the legislation of many countries during the last decades of the 20th century. Similarly, in FYR Macedonia, this informal way of settling the disputes among parties in property law, contract law, business law, and family law cases has been promoted by the judicial reforms of the years 2000. The Draft Criminal Procedure Law (hereinafter DCPL) incorporates a separate chapter (Chapter 30) that

defines the terms for the mediation procedure within a criminal case and states that an agreement can be reached voluntarily among the victim and the offender in cases that are prosecuted by private charges[9], provided that such an agreement will be reached in front of a mediator rather than in a court process and will only be confirmed and executed by the court (art. 497-502). This kind of procedure is related to the alternative punishments which are provided through the Criminal Code as a substitute for short imprisonment sentences.

The process of mediation and the use of restorative justice help the victim implement not only their right to compensation and legal assistance, but also the right of active participation in the legal processes, which tends to be the most difficult right to be implemented. Therefore, the use of restorative measures is encouraged by the European Union as well as the Council of Europe[10].

FYR Macedonia is in its way of implementing this new approach which will soon be a part of its legislation. Local experts look at it as an important tool for involving more parties in the decision making process and are optimistic in its use in the country[11]. Therefore, some essencial conclusions can be drawn from these new developments in the legislation:

- The restorative justice gives more space to the victims to express themselves and therefore, to actively participate in the penal process;
- The rights of the offender and the rights of the victim are balanced in proceedings that include an equal treatment of the parties;
- The decision in this process is reached by a non-court institution, in a more informal atmosphere, but still, it represents a decision brought by an independent subject that works under precisely specified criteria;
- It represents a good opportunity to take off some cases from the courts so that they can deal with more importand and serious offences;
- The community is more involved and can help both the victim and the offender to overcome the conflictual situation, through what all the aims of the system of punishmet are achieved.

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[9] The criminal procedure in FYR Macedonia can be initiated by the *public prosecutor* (who initiates a prosecution act), the *private party* (who initiates prosecution for less serious offences such as slender, body injury, etc.), as well as the *subsidiary prosecutor* (who takes off the prosecution if the public prosecutor withdraws from prosecution in cases that are prosecuted *ex officio*). The latter form of subsidiary prosecutions will not exist according to the changes provided in the DCPL.

[10] EU Council Framework Decision on the standing of victims in criminal proceedings, 2001/220/JHA. (2001), The Council of Europe Recommendation No. R. (99) 19 concerning mediation in penal matters (1999).

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3. Victims rights in plea negotiation process

It was perviously mentioned that the most difficult right of the victim to be implemented is its right to actively participate in the court proceedings. The restorative justice respresents an enormous step towards filling this gap between the official institutions and the victims rights, but unfortunately, it cannot always be used. Restorative justice and mediation processes are more likely to be implemented in less serious offences in which the situation can easily be brought back to normal and the harm can easily be compensated, not to forget, that it works the best with first time offenders rather than recidivists.

While the most essential characteristic of restorative justice is the involvement of all the concerned subjects in the process of delievering justice, plea negotiation, on the other hand, excludes the victim from the process of negotiating the guilt of the offender. It is used by many countries, mostly in the common law system, where it represents a normal way of dealing even with serious criminal cases.

From the point of view of the victim, the plea negotiation process is a dangerous threat to their fragile, newly constituted rights, first of all because the victim is simply excluded from the plea negotiation which is conducted exclusively among the public prosecutor and the offender. Different authors call for establishing an opportunity for a "victims' veto" (Kennard, 1989) in these kinds of negotiations, which is an idea difficult to implement.

The plea negotiation and bargaining can be considered as a moral problem from several points of view:

- First, it represents a violation of one of the most essential principles of a democratic penal procedure and that is the pursuit of material truth. Plea bargaining brings the justice back to the Middle Age when the confession of crime was considered a complete proof (*probatio plena*) and queen of all proofs (*regina probationem*). The democratic penal procedure would have to search for the material truth beyond what is confessed by the accused, instead of encouraging the confession.
- Second, it emphasizes the view that even justice can appreciate the machiavelistic approach that the goal justifies all means, which brings the victim in a position to feel like they are objects rather than subjects in the penal procedure.
- Third, as Sanders and Young emphasize, "[t]he problem is that in practice no guarantee can be given that the innocent will not be made to suffer as a result of bargain justice…" (p.430).

A very interesting way to analyze especially the third problem is through the prisoner dilemma theory which has helped John Nash dicsover the *Nash equilibrum* and use it to explain economic rules and theories, but it also helps to understand some more

about the plea bargaining dilema. Hence, if two arrested persons that have been working together are being separately interrogated and are separately offered a deal which states that if they plead guilty and accept to testify against their colleague, then they will get a minimal sentence, the possibilities explained in the Table 2 can occure:

Table 2. Prisoners' Dilema   **(Binmore 2007)**

	Arrested person A pleads guilty and testifies	**Arrested person A pleads not guilty**
Arrested person B pleads guilty and testifies	Both of them get 5 years imprisonment	Arrested person A gets 10 years imprisonment Arrested person B is released from sentence
Arrested person B pleads not guilty	Arrested person B gets 10 years imprisonment Arrested person A is released from sentence	Both of them get 6 months imprisonment

In this situation, it is more than obvious that for an innocent person it is much harder to confess a crime that he did not commit, therefore, such a person will naturaly tend to plead not guilty, whereas on the other hand, the person that has committed the crime, will tend to plead guilty and in that way get off with a shorter sentence just bacause he has agreed to testify against his colleague. Now, where is the justice in that! It surely helps to remember Beccaria (1764) arguing that the use of torture condems the innocent in either way:

> A strange consequence that necessarily follows from the use of torture is that the innocent person is placed in a condition worse than that of the guilty, for if both are tortured, the circumstances are all against the former. Either he confesses the crime and is condemned, or he is declared innocent and has suffered a punishment he did not deserve. The guilty man, on the contrary, finds himself in a favorable situation; that is, if, as a cosequence of having firmly resisted the torture, he is absolved as innocent, he will have escaped a greater punishment by enduring a lesser one. Thus the innocent cannot but lose, whereas the guilty may gain (p.33).

Therefore, if the plea bargaining is compared to torture, it can have more common points than if compared to restorative justice. This is why the incorporation of the plea negotiation process in the DCPL of FYR Macedonia raises some serious concerns having in mind the essence of the continental criminal procedure, mostly because the victim is totally excluded, and therefore, this bargaining process (which is supposed to be implemented for crimes that are punished by 1 to 10 years imprisonment) is contradictory to the victimological approach that the DCPL is trying to promote.

Two major conclusions that can be drawn from the previous arguments are the following:

- Plea negotiation is essencially very harmful to victims rights and contradicts the substance of these rights in countries where it represents a closed negotiation among the public prosecutor and the offender. It can have some positive sides though, having in mind that the victim will not have to testify and undergo the direct and cross investigation, however, their rights will be gravely violated if there is no rule to allow them to take part in the very process of negotitations.

- The use of this process is also harmful to the society because dangerous criminals are likely to serve determined but short sentences, which essentially is neither fair nor just, since this approach makes the offender be convinced that he can get along easily with what he has done.

4. Conclusion

Restorative justice and plea negotiations are institutes that relate differently to the victims' rights. The separate conclusions are given in the corresponding parts of the study, whereas a general conclusion would be that it must be decided whether a legislation will have a victimological approach or a traditional, state vs. offender approach. In the former case, there is no room for both restorative justice and traditional plea bargaining. Either the plea bargaining will change its mode and will involve the victim as a separate subject, or the concerned criminal procedure will not be able to be considered respectful of victims' rights.

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Cultural Integration of Bulgarian Immigrants' Children in Greece through the Similarities between Greek and Bulgarian Proverbs and Sayings

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1. Introduction

Immigrant integration is without a doubt an important issue in the modern world and it is no wonder that it has been researched from various scientific points of view. Regarding the emigration of Bulgarians to Greece, there is an interesting statistical fact: according to the Bulgarian Ministry of Foreign Affairs, as of February 7th, 2005 (the latest official statistics) the number of Bulgarians living in Greece is 290000 – making Greece the country housing the most Bulgarian emigrants. In comparison, according to the same source, there are 270000 Bulgarians in USA; 120000 in Spain; 70000 in Italy; 44300 in Germany; and 44000 in UK. If we take into account that this number has risen significantly after the borders between the two countries were opened in January 2007 when Bulgaria joined the European Union, the need for researching the process of integration of Bulgarian immigrants' children into Greek society is quite evident.

On the one hand, when discussing the creation of a basis for a culture of behaviour, pedagogical research and practices concentrate on the period of pre-school childhood. Therefore, it is when children are in the pre-school age that it is necessary to find a means of unification, based on which to create forms and methods of pedagogical interaction to help the process of integrating Bulgarian immigrants' children into Greek society.

On the other hand, the rising interest in the definition of 'meaning' and its ever-increasing role in human behaviour are continuously paving the way for a transition towards a semantic way of thinking. Every passing day confirms the perception of the modern world as a vast system of signs, each of them bearing pieces of information, which we have to know how to access and understand. The ability of proverbs and sayings to integrate the wisdom and experience of our forefathers into a short

expression makes them not only excellent moral templates for behaviour, but also primal cognitive matrices on which to build upon – at least for the people who can interpret them adequately. But these forms of verbal folklore, seen as short and clichéd signs that are poetic expressions of everyday situations, might be used for something much more: helping the process of integration of Bulgarian immigrants' children into the Greek society and Greek language, through getting these children involved in equal peer-mates relationship with Greek children at the same age on the basis of the similarities between sayings and proverbs of the two neighbouring cultures. Mostly because of the geographical proximity of the two countries, there are a lot of similarities to be found between Bulgarians and Greeks with regard to the above folk genres. Additionally, because of their short size and ease of use, proverbs and sayings remain alive during everyday speech, even when people have moved outside their home country.

2. Research Aim and Hypothesis

The **aim** of the proposed research is to find, analyze and categorize a collection of Bulgarian and Greek proverbs and sayings whose literal meanings correspond, in order to develop a theoretical model of pedagogical interaction based on their similarities, which can be used to help the process of cultural integration of Bulgarian immigrants' children aged 5 to 7 years into the Greek society**.** This is also related to the **main hypothesis** of the proposed research, which is that the similarities between Bulgarian and Greek proverbs can be used as a cultural matrix for developing educational tools in the field of intercultural education between Bulgarian and Greek children.

3. Methodology:

Five main research stages have been conducted so far:

Stage I: Researching the official Greek educational materials in order to determine the place of proverbs and sayings in children's education in Greece.

Stage II: Preparing a questionnaire for teachers and parents from the Bulgarian Sunday School in Athens, collecting proverbs and sayings in Bulgarian and Greek which are in use nowadays abroad; and analyzing the information from the questionnaires in order to identify the most popular proverbs and sayings whose literal meaning corresponds in both languages.

Stage III: Selecting proverbs and sayings suitable for children aged 5-7.

Stage IV: Additional selection of proverbs and sayings from bilingual publications (English and Greek; English and Bulgarian) dealing with proverbs in order to facilitate international understanding of the proposed research we have found corresponding proverbs and sayings in English.

Stage V: Laying the foundation for the cultural integration model.

During the first stage, we have researched some educational materials approved by the Greek Ministry of Education and Religious Affairs. This included materials for use in

pre-school settings, in order to determine the place of proverbs and sayings in children's education in Greece, as well as materials for use in the first grade in school.

We have used two official kindergarten resources: Greek Pedagogical Institute (2002) A Cross-thematic Curriculum Framework for Compulsory Education (DEPPS), and Kindergarten teachers' manual: Designing creative learning environments (Dafermou et al, 2006). As far as these two official documents are concerned there is no clear and specific reference to proverbs. But proverbs are extensively used in preschool settings (Kostinoudi & Sivropoulou, 2009; Kourkourika & Moraiti, 2007; Pagoulatou 2007; Sarakintsi, 2003; Panagiotidou & Sarakinidou, 2003).

Kostinoudi & Sivropoulou (2009) use proverbs and sayings to test how children work individually and in small teams (4 children in each team) and to help children's literacy development. They use 24 proverbs and sayings, such as 'Like cats and dogs'; 'The apple does not fall far from the tree', etc. They use some pictures to stimulate children's thinking, for example:

Όταν λείπει η   *χορεύουν τα*
('When the cat's away, the mice will play')

In Kourkourika & Moraiti (2007) there have been published some materials about music in kindergarten and it is mentioned that there they utilize different kinds of texts (among them and proverbs), but there is no detailed reference apart that they will use proverbs, among other texts.

Genakou (2003) pays attention to proverbs as metaphors and children's reading behind the words. As an example, she uses the common proverb 'The apple does not fall far from the tree'. She also mentions the proverb 'An apple a day keeps the doctor away'. The author suggests that proverbs and sayings should be included in language activities aiming at their learning and understanding by children through different games. She uses very good rhyme to explain the core of proverbs to children (Genakou 2003, p. 315):

Είναι μια μικρή κουβέντα	[It is a small phrase
με μεγάλη σημασία.	with a big meaning.
Κρύβει πείρα, κρύβει γνώση	It hides experience, it hides knowledge
έχει χιούμορ και σοφία	it has humour and wisdom
και με λίγα λόγια	and with only a few words
αποφεύγεις την πολυλογία.	you avoid talking much.]

Proverbs are used as pedagogical tools in Sarakintsi (2003). In a thematic unit about 'bread', one of the activities was to read, write and draw the following proverbs: 'If someone doesn't want to knead he sifts ten days'; 'If you don't seed in October then

you will have just a little wheat'; 'Whoever is hungry dreams about loaves of bread and whoever is thirsty dreams about wells'.

In a book by Hadzhimanoli (2005), proverbs and sayings are grouped by key-words, combined with excellent illustrations, suitable for pre-school children. Each illustration features both the text of the proverb or saying (above the picture) and the literal explanation (below the picture). This kind of presentation is very useful, as it can help children understand proverbs and sayings most properly and it can be used by both teachers and parents.

According to the use of proverbs in the Greek curriculum for Grade 1 (Greek Pedagogical Institute, 2002) in the 'Literature' section, it is mentioned that the main target is the familiarization of children with texts of popular literature. Later in the section of 'Indicative practices' it is mentioned that in classrooms children can collect 'popular tales, traditions, proverbs, enigmas from family settings' (p.30). There are no proverbs in Language books, but in the 'Study of the Environment' book, part of the chapter on 'civilization' is dedicated to proverbs (p.119). In this chapter there is the proverb 'the song is for the vintage and the tale for December'. Children are encouraged to write and draw proverbs. They are given a task to collect the proverbs and make a book for them. Also, they are called to act out or sing about a proverb.

Therefore, the conclusion after the review of the literature is that, while there is no special focus on proverbs and sayings in the curriculum, Greek teachers have some pedagogical directions for using them and they do use them during the pedagogical interaction in kindergartens, as well as in first grade at school. This means that the proposed model will have some basis to build upon.

According to the second stage of the research, we have prepared questionnaires in Bulgarian and Greek language for collecting proverbs and sayings which are in use nowadays abroad. The questionnaires were given to: 1) teachers who work in Bulgarian Sunday School in Athens; 2) parents of children who attend the same school (living in Athens and speaking Greek well); 3) students from Greece at the Faculty of Primary and Pre-school Education in Sofia University 'St. Kliment Ohridski' (now living in Bulgaria and speaking Bulgarian well). Analyzing the collected questionnaires helped us identify the most frequent Bulgarian and Greek proverbs and sayings which are alive nowadays. We needed them for the third stage of the research where we have selected the proverbs and sayings most suitable for children at the age of five to seven years.

After enriching the set through an additional selection of proverbs and sayings from bilingual publications - English and Greek (Stathes, 1998), we have also found corresponding proverbs and sayings in English (stage four) in order to facilitate international understanding of the proposed research.

In the fifth stage of our research we have laid the foundation for the cultural integration model, putting in hierarchical order the selected proverbs and sayings with corresponding literal meaning in Greek and Bulgarian (Table 1). The idea is for this content to become the core of the model which will be finished in the fall of 2010/2011 academic year. The principles, methods and forms of pedagogical interaction are also going to be explained in our next publication, when the approbation of the model will have been conducted. We expect our main findings to confirm the hypothesis that the

similarities between Bulgarian and Greek proverbs can be used as a cultural matrix for developing educational tools in the field of intercultural education between Bulgarian and Greek children.

Table 1: Bulgarian and Greek literally corresponding proverbs and sayings suitable for use in preschool age (with translation in English).

N	Bulgarian Proverb or Saying	Literally corresponding Greek Proverb or Saying	Similar by meaning English Proverb or Saying
1	*Тънък като клечка.*	*Λεπτός σαν οδοντογλυφίδα.*	**Thin as a stick.**
2	*Гладен като вълк.*	*Πεινάει σα λύκος.*	**Hungry like a wolf.**
3	*Треперя като лист.*	*Τρέμω σα φύλλο.*	**Shaking like a leaf.**
4	*Като две капки вода.*	*(Μοιάζουν) Σα δυο σταγόνες νερό.*	**Like two drops of water.**
5	*Като кучето и котката.*	*Σαν το σκύλο με την γάτα.*	**(Arguing) Like cats and dogs.**
6	*Играя си с огъня.*	*Παίζω με τη φωτιά.*	**Playing with fire.**
7	*Вися на <u>косъм.</u>*	*Κρέμομαι από μια <u>κλωστή.</u>*	**Hanging by a hair (thread).**
8	*На две магарета слама не може да раздели.*	*Δεν μπορεί να μοιράσει δυο γαιδάρων άχυρα.*	**He cannot divide two donkeys' straw.**
9	*Очите ти на <u>четири.</u>*	*Τα μάτια σου <u>δεκατέσσερα.</u>*	**Be on your toes.**
10	*На ръба на пропастта.*	*Στο χείλος του γκρεμού.*	**Standing on the edge.**
11	*Не можеш да носиш две дини под една мишница.*	*Δύο καρπούζια δε χωράνε κάτω απο μια μασχάλη.*	**Two watermelons don't fit under one's arm.**
12	*Онзи, който гони <u>два</u> заека, не хваща нито един*	*Όποιος κυνηγά <u>πολλούς</u> λαγούς, κανένανε δεν πιάνει.*	**He who chases many rabbits catches none.**
13	*Вълкът козината си мени, но нравът си – никога.*	*Ο λύκος και αν εγέρασε και άλλαξε το μαλλί του, μήτε τη γνώμη του άλλαξε, μήτε την κεφαλή του.*	**A tiger doesn't change its stripes.**
14	*На каквото си постелеш, на това ще легнеш.*	*Όπως έστρωσες θα κοιμηθείς.*	**You've made your bed, now lie in it.**
15	*Каквото посееш, такова ще пожънеш*	*Ό,τι σπείρεις θα θερίσεις.*	**You reap what you sow.**
16	*Езикът кости няма, ама кости проши.*	*Η γλώσσα κόκαλα δεν έχει και κόκαλα τσακίζει.*	**A blow with a word strikes deeper than a blow with a sword.**
17	*Голям залък глътни, голяма дума не казвай.*	*Μεγάλη μπουκιά να φας, μεγάλη λέξη να μη πεις.*	**Swallow your pride.**
18	*Казана дума-хвърлен камък.*	*Τα λόγια δεν παίρνονται πίσω.*	**A word spoken is past recalling.**

19	*Три пъти мери, един път режи.*	*Τρεις φορές μέτρα και μετά κόψε μια.*	**Measure twice, cut once.**
20	*Приятел в нужда се познава.*	*Ο καλός φίλος στην ανάγκη φαίνεται.*	**A friend in need is a friend indeed.**
21	*Търкулнала се тенджерата, та си намерила похлупака (капака).*	*Κύλησε ο τέντζερης και βρήκε το καπάκι.*	**Birds of a feather flock together.**
22	*Кажи ми какви са приятелите ти, за да ти кажа какъв си.*	*Δείξε μου τους φίλους σου, να σου πω ποιός είσαι.*	**Show me your friends and I'll tell you who you are.**
23	*Мокър от дъжд не се бои.*	*Ο βρεγμένος την βροχή δεν την φοβάται.*	**Someone who is wet is not afraid of the rain.**
24	*Който копае трап другиму, сам пада в него.*	*Όποιος σκάβει τον λάκκο του άλλου ο ίδιος πέφτει μέσα.*	**If you dig a hole for someone, you will fall in it.**
25	*Ясно небе от мълния не се бои.*	*Καθαρός ουρανός αστραπές δεν φοβάται.*	**A clear sky is not afraid of lightning.**
26	*Когато котката я няма, мишките танцуват.*	*Λείπει η γάτα, χορεύουν τα ποντίκια.*	**When the cat's away, the mice will play.**
27	*Не всичко, което блести, е злато*	*Ό,τι λάμπει δεν είναι χρυσός.*	**All that glitters is not gold.**
28	*Най-добре се смее този, който се смее последен.*	*Γελάει καλύτερα όποιος γελάει τελευταίος.*	**He who laughs last laughs best.**

Bulgarian and Greek proverbs and sayings without literal corresponding but suitable for use in preschool age

N	**Bulgarian Proverb or Saying**	**Corresponding Greek Proverb or Saying**	**Similar by meaning English Proverb or Saying**
1	*Капка по капка – вир става.*	*Φασούλι το φασούλι, γεμίζει το σακούλι.*	**Bean by bean one fills the sack./Brick by brick you build a house.**
2	*Лъжливото овчарче/ На лъжата краката са къси.*	*Ο ψεύτης και ο κλέφτης τον πρώτο χρόνο χαίρονται.*	**Lies have short legs and are soon overtaken.**
3	*Присмял се хърбел на щърбел.*	*Είπε ο γάιδαρος τον πετεινό κεφάλα.*	**The pot calling the kettle black.**
4	*Хитрата сврака - с двата крака.*	*Το έξυπνο πουλί από την μύτη πιάνεται.*	**The clever bird is caught by the nose.**
5	*Ни лук ял, ни лук мирисал.*	*Ούτε γάτα ούτε ζημιά.*	**See no evil, hear no evil.**
6	*Крушата не пада по-далече от дървото.*	*Το μήλο κάτω από τη μηλιά θα πέσει.*	**The apple does not fall far from the tree**
7	*Утрото е по-мъдро от вечерта.*	*Η μέρα είναι πιο σοφή από τη νύχτα.* *Της νύχτας τα καμώματα τα βλέπει η μέρα και γελά.*	**Tomorrow is another day.**

| 8 | По дрехите посрещат, по ума изпращат. | Τα ράσα δεν κάνουν τον παπά. | **Don't judge a book by its cover.** |

The underlined words have little differences in meaning.

4. Research limitations and practical implications

In the current publication we are presenting the findings from the aforementioned three stages of the research. However, the two most important stages are about to be conducted, namely finalizing the model, and proving it by approbation, to be carried out in a pre-school group in the Bulgarian school in Athens and in an Athens state kindergarten where there are children from Bulgaria. These stages are going to be conducted during the fall semester of acad. year 2010/2011. We have the consent of the principal and the teachers from the two Bulgarian schools in Athens to work personally with the 10 Bulgarian children aged 5-7 years (Group A) who attend the preparatory groups at these schools during the next academic year. We are also arranging cooperation with an Athens state kindergarten, where a similar program will be adapted and organized with children of the same age in a kindergarten group (Group B) in which there will be children from Bulgaria. The two programs will be similar, but each will conform to the specific characteristics of the relevant group. In Group A, where the pedagogical interaction will be led by myself, the main language will be Bulgarian and the supplementary language will be Greek (used for telling some specially chosen Greek tales, proverbs or riddles which have a lot in common with Bulgarian ones). In Group 2, where Greek teachers will work with the children under our supervision, it will be the opposite – Greek will be the main language, while Bulgarian will be the supplementary language.

5. Originality and value of the research

The current research is unique in its concept. Like any other intercultural education program, building and proving this kind of model for educational interaction always has a doubly positive impact: it benefits not only the Bulgarian children to be integrated, but also the Greek children, as part of the accepting environment. The necessity for development in this direction is also evident by its concurrence with relevant European directives (2000 Lisbon strategy, 2002 Barcelona educational council, etc.), according to which the new role of the teacher is connected primarily with development of new pedagogical methods for increasing children's motivation and establishing their identity in the context of cultural variety.

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Coalition formation in Central and Eastern Europe

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1. Analytical framework

The events in the late '80 and early '90 in Central and Eastern Europe represent the communist fall and the beginning of the democratization process in the states from this area. One of the most important changes occurred in these states was the replacement of the one party system with the multiparty system. The existence of several parties in the Legislatives caused the need to form coalitions in order to provide support to the emerging governments from the Parliament.

This paper aim is to explore the politics of coalition in Central and Eastern Europe using the rational choice institutionalism approach. The New Institutionalism appeared in political sciences like an objection to the rational choice and behaviorist approaches developed in the post-war era. The 'New Institutionalism' collocation includes a number of approaches very different between them and sometimes even concurrent[13]. One of those approaches is the rational choice institutionalism.

The rational choice institutionalism has its roots in Douglass North's economic institutionalism. The author considers that 'the institutions are the rules of the game or, more formally, the humanly devised constraints that structure human interaction.' (Mantzavinos et al, 2004: 77) Thus, this approach has as main subject of study the rational agent, like the rational choice theory, but in the case of the institutional approach, the agents' actions are constrained by institutions.

In the case of the coalition formation process, the rational agents are the political parties that seek to optimize their benefits in the government formation process and the institutions are the imposed constraints to the parties by the formal or informal rules characterizing a particular party system. In an article from 1994, Kaare Strøm, Michael Laver and Ian Budge identified five types of institutions that influence the coalition formation process: the ones that affect the cabinet formation, the ones concerning

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[13] For a description of the 'New Institutionalism' approaches see Guy Peters (2003)

cabinets operating rules, the ones concerning the legislative rules, the ones concerning parties' politics of coalition and the ones concerning external veto players. (Strøm et all, 1994: 308-321) The aim of this paper is to analyze how the institutions affect cabinet formation in Central and Eastern Europe.

The authors identify three types of institutions that affect cabinet formation: the ones that affect the cabinets' size and composition, the investiture rules and the recognition rules. One kind of the constrains that affect the cabinets' size and composition represents the existence of the constructive vote of no-confidence that does not clearly specify the characteristics that the coalition must have, but makes less likely that minority expressions will form. The investiture rules relate to the necessity that a coalition must obtain the Legislatives' vote of confidence in order to form the government. The systems where this procedure is not necessary favor the status-quo given the fact that a vote of no confidence and an alternative coalition are required in order to change the one existent. The recognition rules relate to the parties that represents the *formateur* of the new government and their order. This order may be clearly expressed in the constitutional documents or an external actor, like the Head of the State, may have power to nominate a certain party.

2. Research design and data collection

In order to analyze the effects that institutions have on the coalition formation process I will develop a quantitative exploratory research on the coalitions formed in ten post-communist states that adhered at the European Union and so, at least formally, ended the democratization process. The states explored in this paper are: Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Slovenia, Romania and Bulgaria.
In order to do so, I have taken like independent variables 'Necessary vote of confidence' for the exploration of the investiture rules and 'Type of president', 'Nomination of the Prime-Minister by the President' and 'Liberty to nominate the Prime-Minister' for the exploration of the recognition rules. Concerning the first independent variable, I have noted with 1 if there is necessary a vote of confidence and with 2 if it does not. Regarding the 'Type of president' variable I have noted with 1 if the president is popular elected and with 2 if the president is elected by the Parliament. 'Nomination of the prime-Minister by the President' variable shows if the Prime-Minister is nominated by the Head of state; I have noted with 1 if it does and with 2 if it does not. In the case of the 'Liberty to nominate the Prime-minister', I have noted with 1 if the President has the liberty to nominate the Prime-Minister and with 2 if he does not. There are two different situations for the President not to have the liberty to nominate the Prime-Minister.

First of all, there is the case where the states' Constitution indicates the exact order in which the Prime-Ministers should be designated. An example from the Central and Eastern Europe area represents Bulgaria. Bulgarian constitution stipulates that the President nominates a Prime-Minister from the largest party in the Parliament. If the designated Prime-Minister does not succeed in obtaining the Parliaments' vote of confidence, a Prime-Minister from the second largest party in the Parliament shall be designated. If this designated Prime-Minister also fails to obtain the vote of confidence

from the Parliament, Prime-Minister from the minority parties in the Parliament shall be designated. In the rest of the cases studied the President is not constrained by the constitution regarding the order in which he should nominate the Prime-Ministers.[14]

Secondly, the President does not have the liberty to nominate the Prime-Minister in the cases when the governments' termination is due to the change of the party composition of the governmental coalition. Government termination may be due to a change of the Prime-Minister, a change in the party composition of the government or the Prime-Minister death and, of course, new parliamentary elections. (Laver, Schofield, 1998: 145)

As dependent variables I have taken into consideration the 'Type of coalition', if the Prime-Minister and President come from the same party and if the Presidential party is included in the governmental coalition. I have done so in order to identify the influence of the recognition and investiture rules on two of the outcomes of the formation coalition process: the identity of the Prime-Minister and the party composition of the government.
In this paper I have analyzed 111 cabinets from the states in Central and Eastern Europe area, formed after the first free elections in the post-soviet era. I have excluded from the research the caretaker governments and the single-party majority governments. Concerning the latter, I have done so, because in these cases both investiture rules and the recognition rules cannot have influenced the results.

In regard of the data collection, I have used the study made by Courtenay Ryals Conrad and Sona N. Golder (2008) for the coalitions formed in the studied states and the official websites of the states for the last coalitions. Concerning the independent variables I have collected the data from the constitutions of the states.

3. Results

The first issue that should be mentioned concerning the investiture rules in Central and Eastern Europe area is that every constitution stipulates the cabinets' need to win the Parliaments vote of confidence. From the 111 cases studied 76,6% of them (85 cabinets) have won the vote of confidence from the Legislatives. The rest 23,4% (26 cabinets) did not need to win the vote of confidence because the termination of the preceding government was due only to the change of the party composition of the cabinet and not to the Prime-Minister change. From the 85 cabinets that won the vote of confidence from the Legislative 58 of them had a majority status – minimal winning coalitions and surplus majority coalitions – and 27 of them had minority status– single party minority and minority coalitions –, while from the 26 cabinets that did not need to win the vote of confidence only 7 of them had majority status and 19 of them had minority status.

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[14] The Romanian constitution stipulates that the President should nominate the Prime-Minister from the largest party only if it obtains 50%+1 from the parliamentary seats. Given the fact that in this research I do not consider the single-party majority governments, I have chosen to consider that the President has the liberty to nominate the Prime-Minister.

Concerning the recognition rules, first of all, it should be mentioned that half of the studied states have popular-elected Presidents and half of them have parliamentary-elected Presidents. From the 111 studied cases, 55,9% of them (62 cabinets) are governments formed in states with popular elected Presidents and 44,1% of them (49 cabinets) are governments formed in states with parliamentary elected Presidents. Another issue that should be specified is that from the ten studied states in nine of them the Prime-Minister is nominated by the President, the only exception being Hungary where the Constitution does not give this prerogative to the President. Thus, there are 31,5% (35 cabinets) of the studied cases where the Prime-Minister was not nominated by the President and 68,5% (76 cabinets) where the Prime-Minister was nominated by the President[15].

Table 1 examines the frequency of the type of coalitions formed in the studied states. There are also specified the investiture and the recognition rules for every particular state, as they are specified in the states' constitutions, as well as the type of President of those states.

Table 1

Country	Necessary vote of confidence	Type of president	Nomination of the Prime-Minister by the President	Type of coalition					Total number of cabinets
				Minimal-Winning Coalition	Surplus Majority Coalition	Single Party Minority	Minority Coalition	Non Partisan	
Bulgaria	1	1	1	2	1	1	1	1	6
Czech Republic	1	2	1	5	0	2	3	0	10
Estonia	1	2	1	7	0	2	1	0	10
Hungary	1	2	2	3	5	1	0	0	9
Latvia	1	2	1	4	6	0	7	0	17
Lithuania	1	1	1	3	3	0	3	0	9
Poland	1	1	1	7	1	3	5	0	16
Romania	1	1	1	1	4	4	6	0	15
Slovakia	1	2	1	5	1	1	3	0	10
Slovenia	1	1	1	4	2	0	3	0	9
Total				41	23	14	32	1	111

As we can see in table 1, there is a great closeness between the number of cabinets with majority status 58,2% (32 cabinets in the states with popular elected President and

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[15] There are only 9 Hungarian cabinets analyzed. In the rest 26 of them the Prime-Minister has not been nominated by the President due to the fact that that the termination of the preceding government involved only the party composition of the cabinet and not a change of the Prime-Minister.

32 in those with parliamentary elected President) and the ones with minority status 41,8% (29 cabinets in the states with popular elected President and 17 in those with parliamentary elected President).

In order to examine the two studied outcomes of the coalition formation process, the identity of the Prime-Minister and the party composition of the cabinet, table 2 shows the frequency of the cases where the Prime-Minister and the President come from the same party and the frequency of the cases where the 'Presidential' party is in the governmental coalition. In table 2 there are also specified the recognition and investiture rules as in table 1. There are excluded from this analysis 38 cabinets where the President was independent.

Table 2

Country	Necessary vote of confidence	Type of president	Nomination of the Prime-Minister by	Presidential Party x premiership party		Inclusion of the Pesidential party into the governmental coalition		Total number of cabinets
				The same	Not the same	Yes	No	
Bulgaria	1	1	1	2	4	2	4	6
Czech Republic	1	2	1	2	4	2	4	6
Estonia	1	2	1	2	8	5	5	10
Hungary	1	2	2	0	4	1	3	4
Latvia	1	2	1	0	8	5	3	8
Lithuania	1	1	1	0	1	0	1	1
Poland	1	1	1	7	4	7	4	11
Romania	1	1	1	11	4	14	1	15
Slovakia	1	2	1	6	4	7	3	10
Slovenia	1	1	1	1	1	1	1	2
Total				31	42	44	29	73

As we can see in table 2 there is not a majority of cases where the Prime-Minister comes from the same party as the President – only 42,5% of the cases – but there is a majority when it comes to the inclusion of the 'Presidential' party in the governmental coalition – 60,3% of the cases.

4. Conclusions

As we can see from the results of this research, the political parties from the studied area opted mostly for majority formulae and especially for the minimal winning one in order to form the governments. Despite this fact, there are a great number of cases where the governmental coalition formulae had a minority status in the Legislatives, even though in all the studied states there is the need of the newly formed cabinet to obtain the Parliament's vote of confidence. The need to win the Parliaments vote of confidence, as investiture rule, may suggest that a newly formed government should have a majority status in order to obtain the Legislatives support.

An explanation of this fact may stand in the nature of the recognition rules, more particularly, in the Presidents' power to influence the coalition formation process by his prerogative to nominate the Prime-Minister mostly in the states where he has the liberty to do so. Given the fact that in 31 of 73 cases where the President was not independent, the Prime-Minister and the President came from the same party we may come to the conclusion that the President may favor the candidate that comes from the Presidential party. The other outcome of the coalition formation process, the party composition of the cabinet, clearly shows that the recognition rules can have a great influence on the coalition formation by including the Presidential party, in a majority of cases, in the governmental coalition, mostly in the states with popular elected President.

The existence of the large number of cabinets with minority status may be explained also by the fact that the investiture rules in this states does not imply the fact that every formed cabinet need to win Parliament's vote of confidence. When the termination of the preceding government is due to a change in the party composition, the new cabinet does not necessarily need to win a vote of confidence. This statement can be proved by the fact that there were more cabinets with minority status than with majority status that did not need to obtain a vote of confidence from the Legislative, whereas there were more governments with majority status than with minority status when the cabinet did need to obtain the vote of confidence.

As we can see, by studying the politics of coalition from an institutional point of view, we can explain the existence of minority governments as well as the ones with majority status. This is due to the fact that institutional theories on the politics of coalition concentrate mostly on the viability of the government and not on the winning status of it, like the classical rational theories did.

The intercession made in this paper offers an explanation on the politics of coalition in Central and Eastern Europe taking into consideration some of the constraints imposed to the government formation process. Although it offers a comprehensive image on the effects that different formulae of the recognition and investiture rule have on the process, a more complete understanding of the politics of coalition from a rational choice institutionalism point of view should take into account a larger spectrum of the constrains that influence the coalition formation process. This could represent a further direction of the research.

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The impact of EU political conditionality in the Western Balkans – trends and challenges

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1. Introduction

The following paper examines how academic literature conceptualizes the impact of EU political conditionality in the candidate countries, focusing on the Western Balkans. It presents an excerpt of the literature review chapter for my PhD project which analyzes the impact of EU political conditionality on the minority protection policies in candidate countries of the Western Balkans. Political conditionality as understood for the purpose of this analysis refers to the formal and informal conditions that the EU stipulates to the countries seeking membership in the framework of the political criteria for accession. The main objective of the paper is to argue in support of a process based understanding of conditionality which grasps its formal and informal features, in line with the work of Hughes, Sasse and Gordon. By examining the development of political conditionality in the Western Balkans, the discussion emphasizes the flexible nature of this mechanism which creates difficulties for its analysis as an independent variable. This research therefore highlights the need to analyse the construction and development of conditionality prior to the analysis of its impact.

In order to substantiate this argument, the paper first presents a short overview of the two dominant models for analysis of the conditionality in academic literature – the external incentive model and the process-based approaches to conditionality. Having presented the dominant models for analysis of conditionality, the paper analyzes the development of political conditionality in the Western Balkans, emphasizing its transformation and flexible nature. In light of these features, the two models are assessed in terms of their applicability for the analysis of the impact of political conditionality. By focusing on the critiques of the dominant external incentives model, the discussion concludes in support of the optional wide and process based definitions which underscore the flexible nature of political conditionality.

2. Conditionality models in academic literature

Schimmelfennig and Sedelmeier (2004) have developed three models for the examination of the effectiveness of conditionality – the external incentives model, the

social learning model and the lesson drawing model. The conclusions of their research indicate that rule transfer from the EU to the Central and Eastern European (CEE) and the variation in its effectiveness are best explained according to the external incentives model and are linked to the high credibility of EU conditionality and the low domestic costs of rule adoption. Furthermore, the authors show that the effectiveness of EU conditionality depends on the initial conditions, i.e. EU influence was less effective with respect to democratic conditionality, but pervasive in terms of *acquis* conditionality (Schimmelfennig and Sedelmeier 2005 p.210). Having in mind that the credibility of political conditionality is quite low, because of its contested nature and high domestic costs the chances for success of the external incentives model are low. In light of these bleak predictions for success, Sasse (2009) has argued that the link between low domestic adoption costs and effective conditionality undermines the very notion of conditionality (p.18).

In response to these difficulties, more recent studies of conditionality have pointed to its flexible nature and have proposed process-based definitions attempting to incorporate the variety of different influences in the application of conditionality. As already explained in the introduction, EU political conditionality for the purposes of this research includes not only the formal technical requirements on candidates but also the informal pressures arising from the behaviour and perceptions of actors engaged in the political process. Hughes et al (2005) have argued that conditionality is better explained as a multiplicity of actors, perceptions, rewards and sanctions, including both its formal and informal features. Hence, these authors distinguish between formal conditionality, which embodies the publicly stated preconditions as set out in the broad principles of the Copenhagen criteria and informal conditionality which includes the operational pressures and recommendations applied by actors within the Commission to achieve particular outcomes (Hughes, Sasse et al. 2005 p.26).

3. Developments of political conditionality in relation to the Western Balkans

As a region, the Western Balkans has been subject to EU conditionality since the mid 1990s through various instruments and policy frameworks, ranging from the Union's foreign policy to the enlargement portfolio. In the late 1990s, the EU introduced the regional approach for the Western Balkans with the purpose of inciting reforms in the political area, such as return of refugees and inter-ethnic reconciliation. The regional approach, however, did not provide the prospect of membership as the major incentive of conditionality, and did not deliver tangible results. The end of the 1990s, however, denotes a slow shift towards the EU as a framework for integration of the Western Balkans with the launching of the Stabilisation and Association Process (SAP). In addition to the SAAs, the EU at the Thessaloniki summit in June 2003 introduced the common instruments for EU accession, such as the European Partnerships (EPs) and the Progress Reports for the Western Balkans.

Literature analysing the application and the substance of the conditionality towards the Western Balkans has highlighted the extended scope of political conditionality. It has been argued that the EU has conformed to a policy learning model which has resulted in extending the political conditionality and the timeframe for accession (Braniff 2009

p.547). In this sense, the Commission has pursued a more interventionist attitude in comparison, to the previous enlargement, a shift noted already with respect to Bulgaria and Romania by academic literature (Pridham 2007).

Despite this increasing on-the-ground involvement, literature has also recognized that the credibility of membership which is offered to the Western Balkans is far weaker than the credibility of the membership prospect which was offered to the candidate countries in the Eastern enlargement. Croatia is an exception from the region, as the only country which has a clear perspective of accession, following the resolution of the bilateral border issue with Slovenia. The credibility of the membership perspective offered to the other Western Balkan countries on the other hand is much weaker. Anastasakis (2008) highlights that "the EU (a) is adding further, yet necessary, political conditions and criteria to weaker or more reluctant partners and emphasizes the 'journey' rather than the outcome of accession, affecting the credibility of the strategy".

In a setting in which the EU has pursued a more interventionist attitude in the candidate countries, the Western Balkans present challenges on their own side which were not present in the case of the Eastern enlargement. First, political conditionality has been employed at an earlier stage in the pre-accession process affecting the incentive structures that operate both in the Union and in the candidate countries (Pridham 2007 p.234). In the Eastern enlargement, political conditionality was mostly enforced when the countries had advanced well in the negotiations process, as the cases of Romania and Bulgaria indicate. In the case of CEE, once promising applicants have become locked into the process of negotiations, the resultant pressure placed on the candidates further guarantees the fulfilment of the required political conditions, since backtracking could harm the successful outcome (Dimitrova and Pridham 2004 p.109). In the case of the Western Balkans, the only country which fulfils the condition of locking in the negotiations process is Croatia.

Second, political conditionality in the Balkans is being applied to areas which have high domestic costs and have traditionally been outside of the *acquis*, such as reforms of the political system, and even to issues like state and nation building. Due to the unresolved security and constitutional problems that are still open in most of the Western Balkans, the EU in fact has had to move into fields of state and nation building, which have been unknown to the EU in the previous enlargements. This is a rather novel approach in comparison to the previous enlargement, where statehood issues were largely resolved before EU conditionality stepped in. In the Balkans, the processes of EU integration, state and nation building do not go into a sequence as in the previous enlargement, but are intertwined and the EU has become an actor in all of them.

4. Accommodating the analysis of the impact of EU political conditionality in the Western Balkans in the dominant conditionality models

Having provided an overview of both dominant approaches for analysing conditionality and the main features of political conditionality in the Western Balkans, this section moves on to assess the usefulness of both approaches for the analysis of this specific region. The external incentives model, albeit useful has been under criticism from several aspects of its usefulness for the assessment of EU's impact in relation to the political criteria. First, in the case of the political criteria for accession, the external incentive model has been under criticism in relation to the presupposed determinacy of the EU rules. Rational choice explanations of conditionality presuppose an existent consensus between both sides on the content of EU rules and the benchmarks for their fulfilment. On the other hand, as already explained, the political criteria are highly flexible. As a result, this underlying hypothesis of existence of a consensual understanding on the side of both the candidate country and the EU is highly contested in academic literature, especially in relation to political conditionality.

Pridham (2007) concludes similarly that compared with accessions during previous decades, the EU enlargement to the East, was both more demanding and more likely to affect profoundly countries seeking membership. In these conditions, the costs of compliance of target states inevitably rise, especially having in mind the low credibility of membership, thereby creating bleak predictions for the effectiveness of conditionality in the Western Balkans. In his recent analysis of the effectiveness of the external incentives model, Schimmelfennig (2008) concludes that in the Balkans the troubles in the EU accession process are related to the legacies of ethnic conflict and are likely to create significant political costs to the target governments because of their high relevance for national identity. Hence, albeit being able to sufficiently warn against difficulties in the Western Balkans, the external incentive model does not provide further tools for analysing the role and impact of EU in these complex conditions.

It is nevertheless necessary to qualify that the setting of criteria in the political sphere is difficult due to the qualitative nature of these policies. Studies on democratization have commonly highlighted the practical difficulty in setting democratization criteria and evaluating political performance, because political targets are typically qualitative and hard to define as precisely as economic goals (Pravda 2001 p.13). Brusis (2005) also concludes that EU policies are likely to have a more tangible direct impact in issue areas where the EU has a more prescriptive acquis (p.316). Overall, as a result of these difficulties of framing the EU's impact in relation to political conditionality in an external incentives model, research has recommended its use in relation to prescriptive acquis policies.

Second, rationalist explanations of conditionality have been under criticism due to their focus on power politics, which is not always adequate for grasping the nature of conditionality. To illustrate this point, Grabbe (2006) looks at the restrictions of the free movement of people in the 2004 and 2007 accession, thereby concluding that "the

candidates did not just respond to the material incentives provided by the EU's exercise of power"(p.202). Hence, if rational choice theory explains the nature and behaviour of national governments, governments in many cases do not respond to EU conditionality in terms of their most favourable choices. She explains this phenomenon through the locking in the process of Europeanization which had a momentum and logic independently of the negotiations (2006, p.3).

Last, the external incentives model has been under criticism because of the risk to overestimate the effects of the EU conditionality. Having in mind that the processes of Europeanization were simultaneous to the democratic transformation of these societies, the separation of the developments linked to each of them is increasingly difficult. As a result, demonstrating causal links between the impact of the externally induced conditions and the domestic policy choice have been increasingly difficult. The external incentives model, according to Brusis (2005) "does not allow the interference that the domestic change is driven by EU incentives because the Union applies conditionality or because domestic actors justify their decision as driven by EU conditionality" (p.297). As a result of these difficulties the external incentives model does not provide sufficient tools for the analysis of the impact of the EU political conditionality in the Western Balkans and its flexible nature as demonstrated in the previous section.

As already explained, process-based explanations of conditionality emphasize its constructed nature and emphasize the need to trace its development and evolution over time, rather than considering it as an independent variable. Having explained that EU conditionality in the Western Balkans is flexible, extended into politically sensitive areas and characterised by high level of EU interventionism, the process-based explanations are suitable for its study due to several reasons. First, this definition and approach provide for the possibility to examine the process of construction, application of conditionality and its outcome, thereby taking into consideration the changes of conditionality over time.

Second, a narrow definition of conditionality is not appropriate because the Copenhagen political criteria do not define the benchmarks or the process by which EU conditionality could be enforced and verified (Hughes, Sasse et al. 2005 p.25). Third, the process-based definition of conditionality is necessary due to the contextual peculiarities of this process. Research has argued that the EU applied differentiated pressure across applicants, dependent on whether minority protection was regarded as problematic and security relevant in the particular case (Schwellnus 2008 p.187). Fourth, the process-based approaches highlight the importance of domestic actors for the success of EU conditionality and thereby include them as important elements for analysis. Lastly, this approach is much more suitable when looking at the case of the Western Balkans, because of the multifaceted nature of the conditionality process.

The process-based approaches of conditionality as well suffer from limitations especially with respect to grasping the informal aspects of conditionality and the difficulties in posing a universally testable hypothesis. In addition, by emphasising contextual differences, this approach undermines the possibility of devising a general analytical tool, which would be applicable to a group of countries. Despite these

problems, having in mind the features of political conditionality in the Western Balkans, the process-based explanations provide the much needed scope for the researcher to initially examine the process of construction of EU political conditionality as a flexible, rather than independent variable.

5. Conclusion

The objective of this paper was to examine how literature has conceptualized the study of the impact of EU conditionality on the candidate countries for EU accession in order to draw findings for the analysis of the Western Balkans. The paper argued in support of a process based understanding of conditionality which grasps its formal and informal features, in line with the work of Hughes, Sasse and Gordon. For this purpose, the paper conducted the discussion in three parts. First, it presented the external incentives model and the process-based approaches as the dominant frameworks for the analysis of conditionality in the context of EU accession. Second, the paper examined the evolution of EU political conditionality in relation to the Western Balkans since the 1990s. Moreover, it has demonstrated that the EU political conditionality has acquired a much more prominent role than in the previous enlargement. However, despite the increasing involvement, with the exception of Croatia, the credibility of membership offered to these countries is weaker. Hence, the paper has argued that the Western Balkans pose unique challenges to the effectiveness of EU conditionality due to the different timing of conditionality and the high domestic political costs of the extension of conditionality.

Having explained the features of the EU political conditionality in the Western Balkans, the paper turned to an analysis of how the examination of the impact of EU political conditionality on the Western Balkans fits within the conditionality models. The external incentives model faces difficulties when applied to the political conditionality in Western Balkans context, primarily due to its unpromising forecasts. However, it also does not provide tools for further examination of EU's interaction with the domestic political structures and their respective role in mediating the impact of conditionality. The primary difficulty in this respect is that the external incentives model considers EU conditionality as an independent variable, thereby neglecting its politicised and constructed nature.

In light of these difficulties, the paper turned to an examination of the wide and process based definitions of conditionality proposed by Hughes et al, which underscores the constructed nature of EU conditionality. While encountering difficulties in terms of the possibility of generalization of findings, this paper considered this approach is more suitable for the contextualised analysis of the impact of EU conditionality. The process-based approach provides sufficient scope for the analysis of EU conditionality as a construct and also takes into consideration its formal and informal features.

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The Significance of Journal Writing for Tertiary Level Foreign Language Learners

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1. Introduction

To encourage my students towards independent learning, improve their writing skills and extend their English language proficiency, I have introduced journal writing into my syllabus. I got this idea from an American colleague two years ago, when we were teaching the same subject and were trying to make a new syllabus. Initially, I must admit that I had mixed feelings about the idea since I had always had the impression that journals were for younger learners and students not suitable for tertiary education. However, after sharing her experience, she convinced me to try it out by giving me some hints on how to use them. Afterwards, I researched the literature and found out that many others had used online and paper written journals in EFL and ESL tertiary teaching and had had some interesting outcomes.

2. Literature Review

In the *Dictionary of Language Teaching & Applied Linguistics,* the journal is defined as "a notebook or book in which students write about experiences both in and outside of school or record responses and reactions to learning and to learning activities"(p.300)

There is confusion on what the difference among journals, logs, and diaries is. A good explanation is offered by Strackbein and Tillman (1987), in Rideout (2001) "Logs facilitate objective, scientific, writing; diaries are written exclusively for oneself ; journals represent diaries written for selected readers-teachers, mentors, peers, and or colleagues"(p.141).

Journals have been used in language teaching since the early 70s in different countries throughout the world and the initial ones have been paper based. However, more recently, traditional paper based journals have been replaced by writing blogs and online electronically journals. Whatever method used, they have proven to be very successful in language learning for many reasons as the literature review below will show.

Journal writing, according to Meyers (1987, cited in Garside, 1994), assists learners to build "the bridge between the concrete, everyday ideas and abstract concepts" (p.3). In addition, as Jordan (1997) has observed, journals help teachers to better understand their students by offering insights into the learner's experience; they give us "a sort or introspection…", (p.34), which provides direct and immediate feedback for teaching improvement.

As Graves (1983, 1994) and, more recently, Wood (2000) have observed, journal writing is a useful tool in developing teacher-student relationships. More importantly, it has been shown to help students to improve their writing skills. Even though Woods has used computers to teach elementary school children to read, it has been proved that they also help in developing their writing skills, in a computer environment though. In an effort to help students, she has given ideas how to develop student literacy skills in digital - based lessons in seven literacy skills: word recognition, fluency, comprehension, vocabulary, reading and writing across the curriculum, process writing, and motivation (p. 9).

In support of journal writing is also Edwards (1998) who related to dialogue journals states that "... journals allow the teacher to tailor responses to the language needs of the students "(p.112).Furthermore, journals give the teacher and the learner an opportunity to get to know each other better and to learn about each others personality differences. Further, Kember and McNaught (2007) state that "reflective journals aim to encourage students to reflect upon their learning by recording their reflections in writing" (p.105). What they mean is the idea that based on the experience of some award winning teachers, the students become more professional if they have the ability to think critically (p.106).Furthermore, they have given some examples of Francis and Cook and how they have used journals and helped their students to feel more comfortable and 'develop confidence ' by initially giving them some guidelines on what to focus on: a brief summary of the workshops students have been engaged in, any new ideas or new learning that came out, any mismatches between what we are doing and their ideas, and how they feel about the particular activity (p.106).

Recently, Matusevich, (2010) has used journals with students on weekly basis and asked them to "... include thoughts and feelings about what is happening in class" (p.1).In those classes students shared their entries with the class or peers whereby a discussion was encouraged based on the entry. However, I deferred this type of journal use for the reason of different cultural beliefs of students from the Balkan region, since as Kerka (1996) has observed, if you make students read their writings in class and in front of other students, or share with less successful students, they become "the object of laughter and humiliation". Therefore, journals in my classes have been excluded from being read aloud therefore students are given more freedom and motivation for writing in their journals and sharing with their teachers. However, sometimes, students were given the chance to share with the person next to them since they usually sit next to friends and therefore, I assumed they would feel more comfortable sharing with them if they wanted.

Trembley (1993) has found out that journals give the teacher an insight not only on the students' needs or what they really need to learn but also how they need to learn it. In this way they contribute to the improvement of the teaching and learning practice in the classroom.

In my case, the relaxing atmosphere in which journal writing takes place offers substantial benefit for students from different cultural backgrounds, especially those who have come from high schools where independent learning, problem solving and critical thinking have never been encouraged.

3. The foundation of this paper

This paper confirms the significance of journal writing as a valuable tool for tertiary students learning foreign languages. Furthermore, the study offers empirical evidence for the importance of journal writing in foreign-language learning. From the multi-cultural perspective of FYROM undergraduate education, it provides practical evidence for the value of reflective free-writing in language and critical thinking development for teachers, researchers, policymakers and curriculum developers.

4. Research questions

Based on my professional teaching experience and informed by the emerging findings in the literature review above, the research questions addressed in this paper include:

1. What do students' journals show about the students' language learning experience?

2. What do journals reveal about students' personality?

3. Do they help in language learning?

5. The study

The study was conducted across two semesters, in the year 2008/2009. Acknowledging convenience sampling, the 82 subjects who participated in this study were students attending my English Language Skills course in the English Department of the Languages Cultures and Communication Faculty (n=82).

5.1 Subjects

Acknowledging convenience sampling, the participants who participated in this study ranged in age from 19 - 21 years old with one student aged 30. Females constituted 70% of the sample group with the reaming 30% being male.

5.2 Instrumentation

Journals were collected at regular intervals and subjected to a modified content analysis (Newnham, Pantebre & Spark, 1999) to identify the main themes interesting students and their most common learning strategies. Semi-structured interviews with five per cent of the sample (3 females and 1 male) were undertaken to substantiate the essential findings of the content analysis. More precisely, thematic content analysis based on Neundorf (2002) have been made in order to "…measure psychological characteristics of individuals …"(p.192)

5.3 Data Collection and analysis

The journals were written on a weekly basis and students were supposed to reflect on what was happening in class, their thoughts and feelings about different issues or methodology used in the classes and topics related to the classes and discussed in the classroom. However, in order to get to know my students better, some of the journals focused on the following: the first journal was "My expectations from this course"; the second was "Write something about yourself: learning habits and preferences"; and the final one was "My opinion about the journal." The journals were assigned for homework and the topics were prearranged, every Monday, and students were asked to return them on the following Monday.

Furthermore, in order to have a more reliable source, journals were not graded as suggested by Paterson (1995) since students may feel threatened to write what they want and rather would write what they think their teacher expects them to. Another suggestion comes from Spack and Saddow (1983) who claim that "ungraded journals can provide a non threatening way for students to express themselves in written English" (p.575). Therefore, the journals in my classes constituted ten percent of the total hundred percent grade of the course. However, most of the time comments were written on their bottom pages, marked with a star and a number indicating the remark. Afterwards, based on the journals, actions were taken in the classes in order to help students overcome difficulties, like error analysis, dependent and independent clauses, etc. For example, after reading the two first journals, I realized that students had difficulty with question words; therefore, the focus of the following week was revising types of questions and doing hands-on activities to improve the use and implementation of those. By the end of the course, students were asked to revise their entries and bring them back so that they got their ten percent.

6. Research limitations

Content analysis of a significant sample on a regular basis demands a considerable effort from the analyst. It is unlikely that a single researcher could maintain this research load with a larger sample. As a consequence, it can be argued, one of the limitations of this study is its relatively small sample size. A second limitation derives from the convenience sampling approach with, in this case, its gender imbalance and

its necessary focus on English Language students. In addition, as Paterson (1995) states, "students may write what the teacher wants them to write".

5.4 Results

Applying a modified content analysis as suggested by Newnham, Pantebre & Spark, (1999), findings from the study identified a range of positive effects deriving from journal writing (Appendix 1). From a learner's perspective, the process fosters critical thinking, contributes to student motivation, and improves language fluency (writing, grammar, reading, spelling, and vocabulary learning). From a teaching perspective, the journals offered insights into student personalities and learning styles to provide valuable opportunities for teaching improvement.

Critical thinking and motivation

As mentioned previously, my students come from a background where critical thinking is not encouraged at all, or better to say it is 'forbidden', therefore, hesitate to speak and take the 'risk' in fear of making mistakes. Journals give them the perfect setting where they can think and say what they think. "I like visual, but I didn't like the PowerPoint the other day, because I couldn't' remember a lot when I tried the exercises". Further, since those students are going to become teachers themselves, they often commented on the methodology" I will use the activity we did today when I become a teacher since it was very interactive and fun… and I can remember the vocabulary much easier than when studying from a dictionary"

Improves language fluency (writing, grammar, reading, spelling, and vocabulary learning.)

Journals were not corrected but some feedback was given at the bottom of the pages, marked with some little stars with the purpose that students make an 'effort' to find out and check themselves "the journal was given back without correction, only with some stars, but I had to take the dictionary and check what I had done wrong". In this way, students were made or forced to do more research and put more effort outside the classes and try to solve the problem.

Apart from that, the most useful of all the journal writing was the vocabulary as "we had to open the dictionaries and look up new words" or "go over the reading passage and try to figure out from the context."

Insights into student personalities and learning styles to provide valuable opportunities for teaching improvement.

The journal gave some useful insight into students' personality type and learner type "sometimes you can tell the teacher things you don't want the others to hear, secrets for example" and "I think I got on well" states the introvert learner. The extrovert on the other states," I don't care about mistakes, but those who don't want to speak in front of others, journals offer the perfect opportunity".

Another issue that was raised by the journals was the way students wanted to learn; group work or individually. Most of the students felt that "group work was better because only your group can hear what you say" And also "if you don't know something it is easier to ask in the group than when we have whole class activities". We can infer that students feel more comfortable working in groups and they can learn from each other. In addition, as interviews and journals have shown students like group work because it gives them more security than talking in front of others. "I can remember more when we work in groups and when class mates know something, we can share ideas ".

Some more introvert students' stated that they "hadn't liked the role-play at the beginning" since they were trembling and scared of making mistakes. However, "when we were acting, during the play, everybody was listening and they applauded, made me feel very good and I wasn't scared for the second time". This journal statement reveals that by doing these communicative activities more often, students , even the most introvert ones, start to feel more comfortable and 'break the ice' by feeling more self-confident.

7. Conclusions and recommendation

The analysis have shown that journals are an important tool in learning and teaching a foreign language since from a learner's perspective they contribute to learning improvement by fostering critical thinking and problem –solving, contributes to students motivation, and improves language fluency. And second, from the teaching perspective they offer insights into students' personalities and learning styles to provide valuable opportunities for teaching improvement.

More precisely, the results of this investigation have shown that journals offer a variety of data related to different aspects of language learning and teaching. This is especially important for different cultural backgrounds for it shows also part of the culture, of diverse groups of people.

However, several major explanations for these results deserve further consideration. For example, how much students have learnt is still unclear and hard to be measured. Even though they claim they have learned a lot and the journals are a measure of proof, to make generalizations, further analysis and investigation needs to be made.

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APPENDIX
1.

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Journal 10

May '09

My opinion on the Journal

≈> As the end of the semester is approaching, I am feeling very sad because I will not write journals any more but I hope that I will continue with journals next semester.

Well, my opinion on the journal is very positive, why??

Because first of all, it helps me a lot to improve my writing.

From the moment that the professor gave us the topic I immediately started to think how I will start, what words I will use or if my paragraphs are in order, understandable and when I had time (usually at during the week-end), I went to my room and started to think critically. My principe was that the room had to be in a big silent, I wanted to have no one to disturb me.

≈> Now, I feel myself proud, I have learned a lot from these journals and step by step I have improved my language including grammar, vocabulary, pronunciation etc.

Sometimes we had some activities in classroom that were very interesting and once we had to write one topic related to these activities like what are our opinions in working in groups, sharing ideas etc. and really this is useful because we can have to activate our memory by thinking what we did in the previous class, how I felt, what I have learned from the others ..etc.

Also the dictionary is a good friend for me, it helps me a lot to find and translate new words, and finally my topic became very clear and I always wrote what I wanted to say.

About two years ago I had some problems with verbs, I didn't know

THE EUROPEAN DEVELOPMENT COOPERATION POLICY: A HUMAN RIGHTS ORIENTED MODEL?

Mejola Kodra, Lorenza Gambacorta

I. Introduction

Since the end of the 80's, coinciding with the end of the Cold War, the European Union (hereinafter EU) policies have been characterized by the EU commitment towards the diffusion of human rights and democratic principles in the world.

Issues related to human rights has acquired more importance in the EU policy, as reflected with the signature and proclamation of the Charter of Fundamental Rights by the Presidents of the European Parliament, the Council and the Commission at the European Council meeting in Nice on 7 December 2000. Albeit its legal status was then uncertain and it did not have full legal effect, the Charter sets out in a single text (Wouters 2001), for the first time in the EU's history, the whole range of civil, political, economic and social rights of European citizens and all persons resident in the EU. Following the coming into force of the Lisbon Treaty in 2009[16], the Fundamental Rights' Charter has the same legal value as the European Union Treaties (Article 6, para. 1, clause 1 TEU-L).

In its dual role, the respect for human rights is a mandatory requirement *ad intra*, for the countries which wish to adhere to (in this sense see "Agenda 2000" or the "no" to Turkey) and at same time, *ad extra* it is reflecting into the numerous initiatives in Third countries or in any agreements they wish to conclude with the Union.

The Council Resolution on Human Rights, Democracy and Development of 28 November 1991, recognized the need for a comprehensive approach that combines negative measures in case of violation of an essential element of the agreement, along with positive measures, of democratic process promotion and protection of human rights. This position has also been

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[16] On 19 October 2007, the informal European Council in Lisbon adopted the final text of the Treaty, as drawn up by the Intergovernmental Conference (IGC.) The Heads of State and Government of the 27 Member States of the European Union signed the Treaty of Lisbon on 13 December 2007. The Treaty entered into force on 1 December 2009.

reflected in the EU Constitution project[17], where Article 177 (ex art. 130 TUE) provided that community policy on development cooperation should contribute "to the overall objective of developing and consolidating democracy and the rule of law, as well as the objective of respecting human rights and fundamental freedoms".

Furthermore, with the Lisbon Treaty the scope and ambition of the EU's external policy are elevated to a new level. The Lisbon Treaty brings the current external Community policies together in a more comprehensive manner[18]. The new Article 2 and revised Article 3, set out entirely new ambitions to emanate these founding values in the EU's relationship with the wider world. In general, it stresses *inter alia* on democratization, rule of law encouragement and strengthening, support for local and regional institutions and promotion of a pluralistic society in the context of sustainable human development.
Hence, the EU has a difficult task here, as it must defend outside of its frontiers the same principles that give sustenance inside (democracy and human rights), while considering that, occasionally, these principles collide with the interests of Member States., *tenacius defensor* of their own foreign policies. As shown below, until now the intergovernmental method has operated more than that one of the communitisation.

II. The conditionality clause: definition, outlook and challenges

The EU's policy of linking development aid with human rights conditions is relatively recent. Only as from 1995 the European Community has inserted a human rights clause in all agreements, other than sectorial agreements, concluded with non-industrialized countries defining respect for human rights and democracy as an essential element underlying the bilateral relations.

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[17] The Treaty establishing a Constitution for Europe was adopted by the 25 Heads of State and Government in Brussels on 17 and 18 June 2004. It was based on an initial draft prepared by the European Convention and presented to the Thessaloniki European Council on 20 June 2003. Following the rejection of the text by France and the Netherlands in 2005 and a two-year period of reflection, on 23 June 2007 EU leaders agreed on a detailed mandate for a new Intergovernmental Conference, with the task of drawing up a Reform Treaty by the end of 2007.

[18] It sets out common principles and objectives for the Union's external action and most of the external relations provisions of the existing treaties are now regrouped in a single Title This is a significant change from the pre-Lisbon situation where Title V TEU dealt with the common foreign and security policy, whereas the Treaty establishing the European Community (ECT) (Treaty of Rome) had Title IX Common commercial policy, Title XX Development cooperation, Title XXI Economic, financial and technical cooperation with third countries, international agreements, restrictive measures, international relations and instruments among the general and final provisions (Part Six).

The conclusion of the Lomé IV Convention in 1989 marked a further step in the evolution of human rights clauses. For the first time, this Convention included a reference to respect for human rights in the body of the agreement[19] although there was still no clause making human rights an essential element of the Convention, nor one providing for its suspension in the event of human rights violations.

However, the Communication reserved the option of taking negative measures "in the event of grave and persistent human rights violations or the serious interruption of democratic processes". These were to be "graduated according to the gravity of each case" and were to include "confidential or public *démarches* as well as changes in the content or channels of cooperation programmes and the deferment of necessary signatures or decisions in the cooperation process or, when necessary, the suspension of cooperation with the States concerned"[20]. The Resolution stressed that "[t]he Community's response to violations of human rights will avoid penalising the population for governmental actions"[21].

With its dual emphasis on positive and negative measures, this Resolution has formed the basis of the EU's external human rights to the present.

Consequently, the positive aspect of promotion finds its obverse in those measures called "democratic conditionality clauses" or "negative conditionality". The term conditionality refers to the fact that certain benefits can be obtained by the fulfilment of certain conditions. Koeberle *et al.* (2005) conclude that conditionality takes many forms both economical and political and is a classic concept in the international development aid.

More recent studies (Feliu' 2001, Gomez 2003, Cebada 2003) show that there are at least two different types of such clauses in international agreements:

- the "basis-clause" with no legal ground for suspension in case of human rights violations;
- the "essential element clause" which confirms that there is a need to respect those rights and principles, and that these principles constitute "an essential part/element" of the agreements.

Negative measures take the form of suspending any benefits under an agreement in response to non-compliance with the norms in an essential elements clause. Where there is no non-execution clause, the justification is

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[19] Article 5 of the Lomé IV Convention referred to human rights a number of times, and contained an operative paragraph 3, which provided that: "at the request of the ACP States, financial resources may be allocated, in accordance with the rules governing development finance cooperation, to the promotion of human rights in the ACP States through specific schemes … [and] resources may also be given to support the establishment of structures to promote human rights".

[20] Ibid, para 6.

[21] Ibid, para 7.

an implied repudiation under Article 60(3)(a) of the Vienna Convention on the Law of Treaties (not Article 60(3)(b)). Where there is a non-execution clause, negative measures takes the form of appropriate measures under that clause. In addition to the interpretative clauses, two extra options have been added to the suspension mechanism:

- Explicit suspension clause or "Baltic clause", first used in agreements with the Baltic States in late 1992, and that enables each party to immediately suspend the agreement in whole or in part, when the other has violated the original provision;
- General non-execution clause, known as "Bulgarian clause", which has been introduced since 1993 and first appeared in the agreements with Bulgaria and other Central European countries, as well as those signed with former Russian republics. It provides more details on the procedures to be followed in case of failure to execute, under a procedure of prior consultation.

Both clauses allow to avoid the procedure of Article 65 of the Treaty of Vienna which provides a number of procedural conditions to follow in case of treaty suspension or termination.

Because of the procedure length, and the ineffectiveness that would lead the compliance with these limits, the EU begin to include these additional clauses in 1992.

Either directly, or via agreements with regional organisations, it has concluded or is negotiating agreements containing human rights and democracy clauses with around 150 countries in virtually all parts of the world.

Nevertheless, the reality has been different. The use of such clauses has been subject to numerous criticisms, most matching the lack of objectivity and consistency in the reality, which has led to talk of double standards practices. Particularly, many observe that there is a gap between bilateral and general agreements. There are no human rights and democracy clauses in any general cooperation agreements with any developed countries.

In addition, the EU does not include human rights and democracy clauses in any sectoral trade agreements with third countries. This does not just apply to developed countries, but also to sectoral agreements with all countries, including those that have a demonstrated difficulty in complying with human rights and democratic principles. All these imply that the level of requirements is different depending on the type of agreement and on the Third-country. Until today, no agreement has been suspended based explicitly on the conditionality clause.

Finally, the Lisbon Treaty may provide a basis for the use of conditionality but the extent of the impact of reforms introduced on the EU's external trade relations, concludes Cremona (2006), is still not entirely clear as the Treaty just came into force in December 2009.

When trying to evaluate EU actions, without any shadow of doubts we can negate the importance of human rights and democratic values for the EU.

Since the last two decades of the century, commendable efforts have been devoted to support and defend these principles throughout the world, with the intention of creating, from this, a distinct and alternative image to that of the other major Western power, the United States. In order to create this image in the international system, the EU has raised the flag of human rights and democracy, wishing to introduce itself as a fair and benevolent actor, for which it has invested large amounts of euros in aid to developing countries, being the main donor in the world.

III. The EU and Albania as study case

Liñán Nogueras (1998) argued that the relevance acquired by human rights clauses in the last decades of the century can not be understood, and most analysts agree on that, without taking into account the changes in the central and eastern Europe, following the fall of the communist bloc.

The first major step was taken in four trade and cooperation agreements signed with Latvia, Lithuania, Estonia and Albania on 11 May 1992. The human rights and democracy clauses in these four agreements proposed Fernández Liesa (1999) were notable for two main reasons. First, where, in the previous version of the clause, respect for human rights and democratic principles had been the 'basis' of the agreement; now it was an 'essential element': Respect for the democratic principles and human rights established by the Helsinki Final Act and the Charter of Paris for a new Europe inspires the domestic and external policies of the Community and Albania and constitutes an essential element of the present agreement.

Second, the 'essential elements' clause functioned as a trigger for the application of a brand new 'Baltic' suspension clause, which stated that: "the parties reserve the right to suspend this Agreement in whole or in part with immediate effect if a serious violation occurs of the essential provisions of the present agreement". The Community also indicated that it wanted to broaden this policy to other countries. On the very same day, 11 May 1992, the Council mandated the Commission to include clauses in the agreements being negotiated with CSCE (now OSCE) countries that was "operational in emergencies, including provisions relating to non-fulfilment of obligations"[22] and authorized the Commission to open negotiations on Europe agreements with two of these countries, Romania and Bulgaria[23].

The heterogeneity of Balkans countries constrains EU efforts to establish a uniform framework of relations with the region (Stabilisation and Association Process - SAP).

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[22] European Communities, *Directives for the negotiation of Europe Agreements with Bulgaria and Romania, point 1.2.13,* Bulletin of the European Communities, (1992),Vol. 5, Available from: http://aei.pitt.edu/1420/01/Lisbon_june_1992.pdf [Accessed 12 March 2007]

[23] Ibid, point 1.2.12.

More often than not, it is unclear whether the EU is more committed to reinforcing existing regional schemes like the Stability Pact (SP) or to encouraging bilateral relations with those states that are relatively better equipped to meet its conditions.

For their part, most Balkan states tend to regard regional schemes with suspicion, sceptical of the benefits they can bring or concerned that they contradict the principal goal of European integration.

The EU launched the OBNOVA financial programme designed to help reconstruction in the WB, having already included countries like FYR Macedonia, Albania, Bosnia -Herzegovina in PHARE. Yet, in reality, bilateral relations barely progressed in the post-1997 period and negative conditionality prevailed in the form of limited contractual relations, exclusions from Association Agreements and, in cases like Serbia outright sanctions. In the aftermath of the 1999 Kosovo war, the bilateral Stabilisation and Association Process (SAP) and the multilateral Stability Pact for Southeastern Europe replaced and updated the Regional Approach. While the SP focuses on regional cooperation in the fields of politics, economics and security, the SAP is intended to act as a mechanism for upgrading EU relations with the individual countries.

For the period 2000-2006, financial assistance was granted through the Community Assistance for Reconstruction, Development and Stabilisation (CARDS) programme, replacing OBNOVA and PHARE. The one incentive the SAP shrank from providing, however, was an explicit promise of membership.

Thus, following a long period of limited contractual relations and negative conditionality, the Western Balkans were provided some positive incentives with respect to their desire to build closer bilateral ties with the EU. Political expediency often played a leading part.

On 31 January 2003, the EU formally opened SAA negotiations with Albania as a means to step up the pace of the reform process.

Overall, EU conditionality in the Western Balkans is established by the following:
   - the general Copenhagen criteria – political, economic and acquis-related
   - applied to all candidate/ potential candidate countries;
   - the 1997 Regional Approach and the 1999 SAP;
   - country-specific conditions to be met before entering the SAA negotiation phase and conditions arising out of the SAAs and the CARDS framework;
   - conditions related to individual projects and the granting of aid, grants or loans;
   - conditions that arise out of peace agreements and political deals (e.g. Resolution 1244 of the UN Security Council, and the Dayton, Ohrid, and Belgrade agreements).

Part of the problem of limited or non-existent regional ownership, is due to the lack of experience of the administrations in many Balkan states in

working with the complex body that the EU represents. The implication is that, even if the WB are given a voice in the priority-setting process, it is disputable to what extent they will be in a position to make the most of that opportunity. This is one of the pitfalls of the protectorate mentality. The EU should, therefore, invest in people. What countries like Bosnia, Albania and FYR Macedonia need, are training programmes to build up local human capacity in all possible ways. Amongst other things, this will greatly help in achieving compliance with EU conditions under the second and, especially, the third Copenhagen criteria. In guise of conclusion, we can say that membership remains, in most cases, a too long-term project.

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Reunified Germany and the Dissolution of Yugoslavia, 1991 – 1995

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The role that Germany played in the Yugoslavian crisis in the early 1990's is rather contradictory and ambiguous. Apart from the accusations that Germany - reunified and sovereign - tried to embark into a struggle for more political and economic influence in the region, there were also claims that Germany had actually set the starting - off point of the war in Bosnia by its unilateral and premature recognition of Slovenia and Croatia. The paper will seek to analyze and summarize the main factors that led to more intensive involvement of Germany's foreign policy in the processes of dissolution of Yugoslavia and to outline the reasons why Germany abandoned its strict obedience to multilateralism at the very first stage of the crisis.

Despite of the traditional German political and economic interests in the Balkans, the region remained outside the priority issues of German foreign policy after World War II (Kaiser and Krause, 1995, p. 177). The Federal Republic like the rest of the West European countries was favored by the relative stability and independence of the socialist Yugoslavia during the governance of Y. Tito. Back in the 1970's - 1980's the economic ties between FRG and Yugoslavia were the main cause for the economic stability of the socialist state. According to ex German foreign minister Genscher (2008) "during the Cold War Germany demonstrated the deepest understanding towards Yugoslavia…We had very close ties to Yugoslavia and we were interested in preserving the unity of the federation" (p.187).

The sustained policy of Germany to keep close ties to Tito's Yugoslavia and to preserve the unity of the federation however changed rapidly in the shadow of the events from 1989 - 1991 when the geopolitical circumstances in Europe changed both Germany's and Europe's security environment.

The process of dissolution of Yugoslavia began in the early 1980's as a combination of specific factors that will not be a subject of detailed analysis in this paper.[24] The strong national feelings and the deep political and economic problems of the federation quickly led to its break - up in the early 1990's.

The decision of Slovenia and Croatia to secede from the federation is pointed out as the starting - off point of the crisis. In March and April of 1990 both Slovenia and

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[24] For more see: Glenny, M. (1992) *The Fall of Yugoslavia. The Third Balkan War*; Kaplan R. (1993) *Balkan Ghosts: A Journey through History*; Finlan A. (2004) *The Collapse of Yugoslavia.*

Croatia held their first multi-party elections in almost 50 years. The Communist reformers lost to the parties favoring national sovereignty within the federation. In June 1990 the two countries announced their decision to secede from the federation and declared independence. Similar processes occurred also on the territory of Bosnia and Macedonia just a few months later.

At that time the international community faced one of the biggest challenges in its history: whether to recognize the seceded countries as sovereign states or not. The issue at hand was that the secession of Slovenia and Croatia contradicted to two fundamental principles of international law: inviolability of frontiers and territorial integrity of states, which should take precedence over the right of self - determination of peoples. [25] Otherwise many countries (such as Great Britain and Spain) would have faced deep problems caused by minorities living on their territories.

That's why in the summer of 1990 the Council of Ministers of the EC initially decided not to recognize the sovereignty of Slovenia and Croatia. However, some member states soon began to follow an independent line. The first to mention was Germany - to German peoples and politicians the right of self - determination meant more than the inviolability of frontiers or the preservation of borders since it was particularly this principle that led to the reunification of the country a bit less than a year earlier. Should Germany itself have complied with the principle of preservation of borders, it would have never got reunified itself.

However, the German affection to self - determination was merely one of the reasons why Germany decided to involve more deeply on the Balkans. In fact, Yugoslavia started to break out at a point when Germany just could not afford to remain uninvolved.

In 1991 when the crisis in Yugoslavia emerged, Germany had just regained its full sovereignty and had become the largest EC member state situated in the middle of the European continent. On international level, reunified Germany was determined to prove its reliability and benevolence within the international structures that the country was a part of. At that crucial time all major international organizations embarked on a process of reform, and Germany itself had been working hard both on deepening the European integration and on the institutionalization of the Conference on Security and Cooperation in Europe.

That's why on international level the emerging conflict on the Balkans became a test on one of the German foreign policy's key constants: multilateralism. The outbreak of the severe ethnic conflicts on the Balkans highlighted policy differences between various European countries at the very dawn of "new Europe" and challenged two main tasks of German foreign policy: the creation of common European space with the

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[25] For more see: Radan, P. (2002) *The break - up of Yugoslavia and International Law*. London, Routledge.

EC as a key player in the international relations and the transformation of the CSCE into a major guard of European peace and security.[26]

Another reason on international level that led to a deeper German involvement in the Yugoslavian processes had to cope with bad experience from the past. Reunified Germany had already suffered sharp critics on its reluctant and insecure policy in the Second Gulf War (1990 - 1991) and now sought to prove that it had already learned its lesson.[27] According to ex Canadian ambassador to Yugoslavia, Bisset, an independent and confident policy towards recognition of Slovenia and Croatia would demonstrate that Germany was capable of taking foreign policy initiatives on its own.

And last but not least - the closeness of the conflict to the German borders threatened the country to become a home of millions former Yugoslavs who would inevitably burden Germany's social system and economy.
For all those reasons the German government decided to follow an active line in the crisis' management and initiated a diplomatic battle in order to guarantee the international recognition of Slovenia and Croatia. In November 1991 German chancellor H. Kohl confessed to his Italian counterpart A. Andreotti that Germany was very close to the recognition of Croatia and that the decision must be taken before Christmas, because time "was taking away".

While Germany was hurrying, the conflicts were deepening. The ethnic fights spread over the territory of Bosnia. The EC's and UN's special envoys on the issues of Yugoslavia, Lord Carrington and C. Vance, warned Germany that a recognition of Croatia would cause a domino effect which would eventually lead to a war in Bosnia (Holbrook, 1999). Germany however wouldn't want to listen.

On December 16, 1991 the EC foreign ministers met in Brussels in order to coordinate their policy towards Yugoslavia. Although merely a few countries had walked their way towards recognition of Slovenia and Croatia, the German foreign minister Genscher felt it necessary to announce that Germany would recognize Croatia *ex parte* even without the support of its partners.
Under the pressure of Germany, the EC's member states decided to recognize the seceded republics as assignees of the former Republic of Yugoslavia should they meet certain criteria (*legal state, democratic structures, protection of minorities and inviolability of frontiers*).[28] The recognition should occur on January 15, 1991. Meanwhile an arbitration commission chaired by R. Badenter should decide whether the seceded states would have met the criteria or not.

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[26] For more see: Haftendorn, H. (2001) *Deutschlands Aussenpolitik zwischen Selbstbeschränkung und Selbstbehauptung.* p. 405-427.
[27] For more on Germany's policy in the Gulf see: Moosbauer, C. Relations with the Persian Gulf States. In: *Germany and the Middle East. Interests and Options.* p. 108 - 129; Asmus, Ronald (1991) *Germany after the Gulf War.*
[28] Declaration on Yugoslavia, Extraordinary European Political Cooperation Ministerial Meeting: Brussels, 16 December, 1991. In: Hill, C. and Smith, K. (ed.) (2002), *European Foreign Policy. Key Documents.* p. 375.

Germany wouldn't wait for the Badenter's decision anyway. Just one day after the summit meeting in Brussels, the Federal government announced its decision to recognize the sovereignty of Slovenia and Croatia unilaterally regardless of the conclusions of the appointed commission. On December 23, 1991 the federal government officially announced the recognition of Slovenia and Croatia as sovereign and independent states.

At this stage of the conflict Germany substantiated its policy on the respect of the right of self - determination of peoples, embedded in the Helsinki Final Accord and the Parisian Charta for New Europe. At that time German foreign minister Genscher chaired CSCE and the German government demonstrated its preferences to that particular structure as a forum for prevention of crises.

The unilateral move of the German government came as "a shock to those who thought they knew the Federal Republic as the cagle scout of European multilateralism" (Hodge, 1998, p.3). According to Hartmann (1999)
> "Despite of all solemn owes to fight for peace and to restrain from struggle for power, taken by Germany just a year ago in the "2 plus 4" process, the Federal Republic intervened massively in the internal affairs of one country...Germany, reunified and powerful, entered the international arena and for the first time after World War II declared openly its ambitions to pursue policy of a great power on the Balkans, where it had already caused major evil twice just within a century"(p. 13).

It was during the Yugoslav crisis that the Federal government came to realize that reunified Germany was perceived differently than the old Federal Republic (Mertes, 2002, p. 19). Until 1992 every single move that Germany would take on international level would inevitably lit a question mark about the German hidden interests. In the Yugoslavian case Germany was accused of supporting the break - up of Yugoslavia in order to "include as territory of its vital interests Slovenia and Croatia, the most economically developed states of the Yugoslavian confederation" (Mahairas). Great Britain and France even suspected a German and Austrian plot for the creation of a "Teutonic bloc in the Balkans" together with "the two former Hapsburg possessions" (Jofee, 1998, p.13). Serbian leader Slobodan Milosevic claimed that the German recognition of Slovenia and Croatia was the starting - off point for the dissolution of Yugoslavia and referred to it as "a tragic mistake" (Genscher, 2008, p.187).
According to ex German foreign minister Genscher (2008) however at that time the war had already began and
> "we concluded that only the internationalization of the conflict could cease it - and this meant recognition of the sovereignty of Slovenia and Croatia….It was clear that Milosevic pursued imperialistic policy in the shadow of the dramatic events from 1989/1990. He aimed at the creation of a Great Serbian state…this was the dynamite that blew up Yugoslavia and led to Slovenia's and Croatia's will to gain their independence" (p. 188).

Although Germany's decision to unilaterally recognize the two states was a mistake, it shouldn't be pointed out as the only cause for the break out of a conflict that perhaps was meant to be - bearing in mind the complicated interethnic issues between Serbs, Croatians and Muslims and the undefined position of both the EC and NATO at the very beginning of the crisis. U.S ex ambassador to Berlin, R. Holbrook, claimed that accusing only Bonn of causing the war in Bosnia would mean to neglect the responsibility of many other states (Holbrook, 1999).

It is worth mentioning that Germany announced the recognition of the two states prematurely, however established diplomatic relations to them not before January 15, 1992 and in that sense did not violate the agreements achieved within the EC. The German unilateral move was condemned more due to its moral - political character and not due to the legal aspects of the issue.

Meanwhile, on January 14, 1992, the Badenter Commission presented its conclusions suggesting the recognition of Slovenia and Macedonia. According to the Commission Bosnia should first hold a referendum on independence under the observation of the international community. Commission's estimation on the situation in Croatia was rather reserved. The EC however complied with Germany's pressure on recognition and declared Croatia and Slovenia as sovereign states. [29] The referendum in Bosnia was held in April 1992 and started a bloody civil war that continued until the Dayton accords were signed in November 1995.

In the two years following the winter of 1991/1992 Germany refrained itself from diplomatic initiatives or actions concerning the Balkans. The country played a leading role in the first stage of the conflict, therefore in the next two years (1992 - 1994) Germany's policy restrained only to conforming to the policy of the EC (EU), OSCE and NATO. The sharp criticism that the country suffered in the early 1990's on its Balkan policy made the German government more than careful on any unilateral and premature initiatives concerning the Balkans.

In the spring of 1994 the German policy on the Balkans activated again - the country became a part of the so called Contact Group (the USA, Russia, Germany, France, Great Britain) whose main task was to open a field for negotiations between the three fighting sides on the territory of Bosnia - Bosnian Serbs, Bosniaks (Muslims) and Bosnian Croats. The cooperation within the Contact Group however was far from successful due to the different approaches of the participating countries. Thus, the United States were moving closer and closer to the idea of air strikes on the territory of Bosnia, while Russia kept on supporting the peaceful solutions. Germany would very soon walk its way towards the American position.

In 1995 the bloody fights in Bosnia reached their peak. The Srebrenica massacre of July 1995 marked the turning point in the western policy and NATO decided to interfere in Bosnia with severe air strikes. On August 30, 1995 NATO launched Operation Deliberate Force and undertook severe air strikes thus causing serious damages to the military structures of the Bosnian Serbs. Germany was exhorted to

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[29] See: Declaration on Yugoslavia, European Political Cooperation, Brussels, 6 April 1992, In: Hill, C. and Smith, K. (ed.) 2002. *European Foreign Policy. Key Documents*, p. 376

contribute with German soldiers in order to support its Allies and to erase the brand on its not - participation in the Second Gulf war.

At that time one significant change had affected Germany's foreign policy: in July 1994 the Bundestag had removed the constitutional constrains on the participation of German soldiers in international military interventions.[30] Germany now could legally participate in the so called out of area missions. Maulle (1999) states that

> "this shift in policy was motivated by two political considerations: first, Germany increasingly felt the weight of its pivotal position in Europe, and the expectations of other that Germany should shoulder larger international responsibilities. Second, concerns about mass famine, human rights violations and genocide, transported by powerful television images, resonated strongly in Germany, producing support for German participation in international efforts to defuse such horrors" (p. 12).

In the autumn of 1995 Germany as a part of the Contact Group continued its efforts to contribute to peace on the territory of Bosnia. The three fighting sides agreed to negotiate at a peace conference in Dayton, Ohio. On the conference the German delegates were mainly concerned with the refugee issue. At that time in Germany there were more than 300 000 Bosnian refugees who were heavily burdening the German social system and budget. That's why at Dayton the German government aimed at the sign of an accord which would stimulate the refugees to go back to their homes.[31] The participating sides reached an agreement that was officially signed in December 1995 in Paris. Although it had a lot of shortcomings, at that point the Dayton accord brought about the end of the war.

One of the most important decisions made in Dayton was the decision on sending NATO forces to implement the agreement and to stabilize peace (IFOR and SFOR). Germany participated in both IFOR and SFOR thus consuming the recent shift in its foreign policy - the possibility to participate in out of area missions. By that, the country managed to increase its political and military role in NATO.

Conclusion can be drawn that Germany's policy in the Balkans in the early 1990s was rather contradictory. However, by the escalation of the conflicts there, the Federal government showed willingness to take more responsibility on the international arena. Despite of the initial variations of German foreign policy between offensiveness and passivity, Germany managed to find its place as a reliable partner in the international community and demonstrated more adequate foreign policy approach in the Kosovo crisis of 1998.

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[30] See: Decision of the Federal Constitutional Court of July 1994 concerning the Deployment of German Armed Forces Abroad. In: Schweitzer, C. (eds.) (1995) *Politics and Government in Germany, 1944 - 1994. Basic Documents*.

[31] In the agreement draft the German representative suggested that the refugees should be granted with the right to vote only in case that when voting they declare intention to go back to Bosnia. Genscher, (1995), p.917

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Tangled memories. Sarajevo's Vraca Memorial Park and the reconstruction of the past in Bosnia and Herzegovina.

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1. Introduction

My aim in this paper is that of presenting the case of a memorial complex in the city of Sarajevo, to explore how remembrance of different events is shaped around one single site, implicitly or explicitly, and what implications these different layers of memory have for the study of public discourses and practices of memory and identity in post-war Bosnia and Herzegovina. Though limited to a specific case, the paper tries to highlight some features from which the study of memory in a post-socialist and post-war context can benefit.

2. Contextualization

In the framework of extreme (ethno)nationalist ideologies fostered by the political elites of the parties involved in the war marking the end of Socialist Yugoslavia, cultural heritage acquired a place within the list of targets for destruction. While nationalist rhetoric juxtaposed ethnic affiliations within a logic of mutually exclusive definitions of self and other based on blood purity, political projects of ethnic homogenization on given territories were pursued with violent means between 1992 and 1995 in the republic of Bosnia and Herzegovina. Efforts of redrawing the territorial organization and demographic composition of the area were carried out using systematic violence against the ethnic other through practices ranging from harassment to deportation, torture, rape, detention in camps and mass killings, where the Serb faction assumed by and large the role of the perpetrator. Within this context, narratives of the past were employed to stiffen ethnic affiliations as well as justify current political and military goals. Cultural heritage was thus directly invested with meaning as symbol of the historical presence of the ethnic other on a contested soil, and targeted for deliberate destruction, in a process in which narrowed notions of identity and belonging were associated most visibly and immediately to tangible items of heritage, such as historical and religious buildings. The strategy of so-called "ethnic cleansing" entailing coercive eradication and/or elimination of people – and, with them, the intangible heritage of the area – was complemented by the devastation of what was identified as physical marker of the other's identity, to the extent that

investigations in the post-war period "found that the entire heritage of Bosnia and Herzegovina is endangered" (Mulalic-Handan 2007: 26).

Halting the conflict in 1995, the General Framework Agreement for Peace (hereinafter: Dayton Agreement) provided for the establishment of a Commission to Preserve National Monuments (hereinafter: the Commission). The creation of a specific body concerned with monuments in this agreement represents the encounter between an international tendency of growing interest and sense of shared responsibility towards cultural heritage and a local experience of systematic destruction of cultural memory.[32] Moreover, it testifies for the investment of cultural heritage with a relevant role in contributing to political stability and economic development in the process of post-war reconstruction, emphasized by the positioning of the Annex establishing the Commission (Annex 8, following Annex 7 on the return of Refugees and Displaced Persons).

3. Vraca Memorial Park as National Monument

Vraca Memorial Park was inaugurated in 1981 as a complex dedicated to the suffering and resistance of the citizens of Sarajevo during World War II. Originally an Austro-Hungarian fortification (completed in 1898), the structure was used between 1941 and 1945 by occupying forces as execution place. Plans for the erection of a memorial in the Socialist period were drafted since 1965, but lack of funds prevented its realization until 1980. When finally erected, the Memorial comprised many individual elements, whose ensemble points in the direction of a memory narrative that honoured victims and victors in one structured message: along with the names of 2,013 fallen fighters and 9,091 victims of fascist terror, the Park comprised a memorial to twenty-six national heroes, a sculpture to combatant women, an eternal flame and messages by Tito.[33] Between 1992 and 1995, the location was used as a military position for snipers and heavy artillery of the forces besieging the city, who, upon their withdrawal, left the site in damaged conditions (subsequently aggravated by neglect and acts of vandalism – *Illustrations* 1 to 4).[34] Nowadays, different "layers" of history can be traced in the space of Vraca Memorial Park: the Habsburg presence (1878-WWI), the experience of war and "revolution" (1941-45), the conflict that marked the end of Yugoslavia (1992-95).

In 2005, following the submission of a petition by the Council of Associations of Fighters of the National Liberation War (SUBNOR – the partisan veteran association created after WWII), Vraca Memorial Park was designated as national monument by the Commission. As established in the Dayton Agreement, the mandate of the Commission is to "receive and decide on petitions for the designation of property

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[32] The 1954 Convention For The Protection of Cultural Property in the Event of Armed Conflict signed at The Hague is one important step in this respect. Bosnia and Herzegovina ratified it in 1993 (see www.unesco.org).

[33] For a detailed list of all the components and description of the site see the website of the Commission to Preserve National Monuments: www.aneks8komisija.com.ba.

[34] Custo 2008.

having cultural, historic, religious or ethnic importance as National Monuments"
(Annex 8, Art. IV). A first glance at the items declared national monuments until now,
leads to two initial considerations on the Commission's work: first, decisions
concerning religious buildings or historical/architectural properties that might be
associated with specific ethnic groups have been designated in "balanced" proportions,
i.e. properties that can be assumed to represent each of the three "constituent peoples"
of Bosnia and Herzegovina (Bosniac, Croat, Serb[35]) were evenly designated. This
suggests that the Commission's efforts are dedicated to positively build upon the so-
called "ethnic key" informing the Dayton Agreement, and that, without "privileging"
any of the groups, its work is directed to reconstruct the heritage of the country in its
entirety, plurality, and heterogeneity.[36] Secondly, it can be noted that monuments
purposely erected to mark historical events/persons (items of heritage other than
historical or religious buildings, bridges, tombstones, archaeological sites) constitute a
tiny minority of the decisions adopted by the Commission, partly because of more
limited destruction in the last conflict. In this respect, the designation of Vraca
Memorial Park as national monument constitutes an "exception".[37]

4. Around Vraca

The designation of Vraca Memorial Park introduces a central question. It concerns the
implications of designating a memorial erected during Socialist Yugoslavia as
"national monument" in 2005 independent Bosnia and Herzegovina. The criteria
applied by the Commission involve considerations on time frame, historical and
artistic/architectural value, and symbolic value[38] of the monument (besides technical
documentation). The question, thus, concerns how we should interpret and what we
might deduce from the fact that a site commemorating the victims of fascism and
celebrating the resistance and victorious revolution of the partisans of WWII has been
declared to have a symbolic significance for the entire nation of an independent Bosnia
and Herzegovina emerged from the armed conflict that brought the very existence of
Socialist Yugoslavia to an end.

The decision of the Commission, while acknowledging the importance of the
monument as part of the Bosnian cultural heritage, simultaneously invests it with new
meanings, by putting it under special protection by the appropriate institutions and
urging them to proceed to its reconstruction. Ultimately, it gives the memorial a formal
recognition through an act that is final and binding, and does so publicly. In this way,
the Commission emerges as a new actor in the process of production and shaping of
national memory.

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[35] See GFAP, Annex 4.

[36] See Hadzimuhamedovic 2008.

[37] Other similar instances are the Partisan Memorial-Cemetery in Mostar and the Memorial
complex of the Battle on the Neretva in Jablanica. See www.aneks8komisija.com.ba.

[38] Criterion **E.v.** Symbolic Value: significance for the identity of a group of people. The text of
the Decision is accessible at www.aneks8komisija.com.ba.

In reflecting on collective memory, I draw from Halbwachs's (1992) constructivist approach and understanding of remembering in relation to social frames, and Kansteiner's identification of memory "makers" and "consumers" as agents involved in memory production (2002:180). As Assmann (2008) remarks,

> collective memory [...] depends on transitions from history into memory that involve the framing of historical events in the shape of affectively charged narratives and mobilizing symbols. If historic dates [...] are selected to be collectively and transgenerationally remembered, "fiction" in the sense of making, shaping, constructing is always implied in their narrative emplotment or visual encoding (p.67).

In studying memory, thus, the focus lies on the process of its creation and the relationships between the actors involved in this process. In this perspective, the Commission functions as a 'mediator', evaluating proposals that any juridical or natural person is allowed to submit, and issuing binding decisions that involve institutions at various administrative and political levels. The petition concerning Vraca Memorial Park was submitted in 2004 by another traditional 'mediator' of remembrance: SUBNOR (see above).[39] The drafting of the petition was completed in SUBNOR's premises, in collaboration with other associations, as the society "Tito", the association of independent intellectuals "Krug 99", the Serbian Civic Council, and the Croatian National Council.[40]

In the process of creation and transmission of memory, a crucial role is played by practices and performances around specific sites (Connerton 1989). During the 1980s, Vraca Memorial Park used to be the destination of frequent visits not only in occasion of official celebrations of important dates, but also for organized trips for students, with "history lessons" *in loco*, and excursions. After the 1992-1995 war, security reasons precluded visits to the site, and nowadays its damaged conditions and its specific location turned it into a place people would rather avoid.[41] Practices around the memorial have reduced to the formal laying of wreaths by authorities and citizens on official days of remembrance. After the designation as national monument by the Commission in 2005, a new petition has been signed to address the lack of concrete measures for its reconstruction, and one "working activity" took place to clean the site.[42]

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[39] On the role of SUBNOR in mediating collective memory during Socialist Yugoslavia see Karge 2009, Custo 2008. The term 'mediator' is taken from Karge's work.

[40] Personal communication, Sarajevo, April 2010. The last two associations mentioned are local NGOs created in the mid-1990s, promoting a Bosnian pluralist identity in opposition to nationalist politics from their respective ethnic groups.

[41] During the siege, the site was mined (Custo 2008). Today, it lays on the boundary between the Federation of Bosnia and Herzegovina and Republika Srpska, the two Entities comprising, together with Brcko Distric, the state of Bosnia.

[42] "Radna akcija na Vracama" (Working activity at Vraca), Dnevni Avaz, 25/05/2008. The action is reported in the forum of the website www.sarajevo-x.com. The facebook group *Spasimo i obnovimo Spomen-Park Vraca* (Let's save and renew Vraca Memorial Park) addressed the petition to the Prime Minister of the Federation of Bosnia and Herzegovina in February 2010.

A second question on Vraca Memorial Park concerns the events that took place on its area between 1992 and 1995. In this respect, what is at stake is the possibility for the memorial to acquire new significance, by being invested with meanings that transcend the messages originally inscribed in the monument within the official politics of memory of the apparatus that erected it. Ascription of new meanings to the existing site might come from any of the actors involved, or might inform the measures (or lack of measures) adopted by the institutions towards the site. Investigating this topic is far beyond the aim of this paper. It is interesting to note, however, that the 2005 Decision of the Commission does mention this part of the history of the Memorial in its description of the site. Similarly, the internet-based group *Spasimo i obnovimo Spomen-Park Vraca* reminds of the damage suffered by the site during the last war, while suggesting that, because of its location, reconstruction might offer the opportunity of collaboration between citizens and institutions of the two Entities.[43]

Reference to this more recent use of the place appears limited to unbiased statements as in the two cases recalled above. Both institutions and groups engaged with the memorial's rehabilitation are committed to restoration to its original look, and the idea of adding some sort of visible "marker" referring to the 1992-95 events is seen as a measure that might encounter resistance.[44] Recently, Mayor Alija Behmen gathered a meeting with the directors of two institutes for the preservation of heritage (the Cantonal and Federal institutes), the president of the Jewish Community, the Mayor of Novo Sarajevo municipality (comprising Vraca neighbourhood), and *Pokop* funeral services, for arrangements to start the reconstruction works.[45]

In sum, the case of Vraca Memorial Park shows a relatively high level of involvement on the part of various associations and groups of citizens, both in formal communications with the institutions and through some activities on the site itself. These groups comprise both individuals who experienced the 1941-45 events directly and younger generations, and their involvement is motivated by distinct meanings with which each group invests the site, on the basis of a shared perception of its significance for Bosnian present identity. The Commission recognized the symbolic value of the Memorial through its designation as national monument, while authorities pay formal tribute to the site on official recurrences.

5. Conclusions

The implications of the relations between memory, power, and identity[46] are increasingly addressed in studies on the recent conflict in Bosnia and Herzegovina, as the (re)emergence or persistence of local memories is explored in relation to the rise of

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[43] See the group's page on facebook, http://www.facebook.com/group.php?gid=29784970754.

[44] Personal communication with a private citizen engaged for the rehabilitation of the Memorial, Sarajevo, April 2010.

[45] May 11th 2010. "Gradonačelnik sazvao sastanak o sanaciji Spomen-parka Vraca", website of the City of Sarajevo, www.sarajevo.ba

[46] Muller 2002.

(ethno)nationalist ideologies and their use and construction of narratives of the past.[47] This reflection is developing especially in relation to the recent armed conflict and remembrances of previous episodes of (inter-ethnic) violence during WWII. As such, the analysis is mainly focused on the role of memory in the context of war and in relation to the rhetoric of reconciliation and post-war reconstruction, and often concludes that 'within a decade the modern Balkan wars [have] generated their own powerful cycle of memories' (Bet-El 2002:207).

This approach would need to integrate enhanced analyses of the articulation of memory during Socialist Yugoslavia and with regard to regime change.[48] The case of Vraca Memorial Park hints at some elements of continuity with Bosnia's socialist past (official visits on important dates, the role of SUBNOR, the active involvement of citizens, rhetorical reference to fascism and antifascism), drawing attention to entanglements between actors and processes of production/contestation/mediation of memory in post-war Bosnia *and* Socialist Yugoslavia.

The engagement around the Memorial points to a further consideration: that one site is identified by distinct subjects and invested with a significance that is understood as common, though variation in the meanings attached to it is present, as is the awareness of possible situations of disagreement and tension over these meanings. This, in turn, hints at the fact that 'we are always part of several mnemonic communities' (Kansteiner 2002:189). All these elements are important variables in studies that understand memory 'as an outcome of the relationship between a distinct representation of the past and the full spectrum of symbolic representations available in a given culture' (Confino 1997:1391).

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[47] See Jansen 2002, Duijzings 2007.

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Appendix 1.

Illustration 1 – Fort, Nov. 2009 (photo: author)

Illustration 2 - Eternal flame with fountain, Nov. 2009 (photo: author)

Illustration 3 - Sculpture to women combatant, Nov. 2009 (photo: author)

Illustration 4 - Panoramic view, Nov. 2009 (photo: author)

'Bury the vine and drink the wine' in FYR Macedonia's Tikveš wine region—privatisation, politics, a changing economy and…preparation for the EU and global markets or a return to the peasantry?

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The topic of my paper borrows from a saying[49] to those expecting too much, too fast and thus comes as a question for a couple of notable reasons. Primarily, hastiness (such as among farmers in EU candidate countries) might be admonished because the EU is an ongoing experiment, a much sought after club in the former Yugoslavia while a questionably imperfect institution among its current members. Second, I am only just beginning my anthropological fieldwork, from which I will glean a much clearer understanding of the transition in the Tikveš wine region of the former Yugoslav Republic (FYR) of Macedonia.[50]

Given the inter-disciplinary nature of this conference and suggestions by its organisers, I would like to discuss FYR Macedonia's potentiality under the EU's Common Agricultural Policy (CAP) and how the case of the Tikveš wine region—the largest wine region in Southeast Europe (SEE)—fits into the drawn out, post-socialist transition in the former Yugoslavia. The extent to which some actors are being impatient, I will address further on in the paper.

To give some background, the Tikveš region occupies approximately 2,000 square kilometres in south-central FYR Macedonia, and is part of the central Vardar-Povadarie region, which produces 85 percent of the country's grapes in total (EU Agriculture and Rural Development Plan, 2009). Grape products (wine and brandy primarily), along with tobacco from nearby Prilep, are FYR Macedonia's main and significant agricultural exports. With 18.6 percent of the workforce involved in

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[49] 'Буцни прчка, пиј вино'

[50] Hereby to be referred to as simply 'FYR Macedonia'.

agriculture (CIA World Factbook, 2010), the role of agriculture in the economy is thus great.

Grapes have reportedly been grown in Tikveš since Roman times, though without doubt industriously since the middle of the 20th century when Tikveš was developed into Yugoslavia's and Southeast Europe's largest wine region. Although Yugoslav growers could maintain their small plots of private land (ten hectares to be precise; Bringa 1995: 51) and had the choice of where to sell their produce, the state-run (and only) large wineries in Tikveš paid well with little regard to modern quality standards and were thus the primary buyers there.

The relationships between growers and state-run collectors continued throughout the 1990s despite the country's independence in 1991. But with privatisation, a changing *modus operandi* has more recently exacted itself through the diversification of grapes grown, lower prices for them and higher standards expected by the wineries for quality wine production. The privatisation of the country's largest winery, named 'Tikveš' (based in the Tikveš wine town of Kavadarci), by a large conglomerate in the capital, Skopje, in 2004 is just one bit of evidence of this.[51] Before then and more so after, the price of grapes have continued to fall as various forces and actors deregulate the industry. The result is that, beginning last year (2009), growers faced record low prices for their crop and were told they would be paid in instalments for it. Unfortunately, as of early summer 2010, the growers were still unpaid for their 2009 harvest.

This system has been employed elsewhere, but makes grape collectors (*vizbi*; the Tikveš winery also being the largest collector, or *vizba*) into surrogate bankers and leaves growers hard-pressed to cover costs expended on their vines and hired labour who helped harvest them. Thus, due to aggravations from low prices set for crops before the harvest to rejection of their grapes by collectors with refined demands from wineries and inactive instalment payment plans, growers have suffered financially and emotionally, as have their families and the entire region. Individuals are running tabs[52] for basic goods at the local grocery stores, and other shops in the region's two main towns of Kavadarci and Negotino are closing down for lack of business and inability to pay their rent. Such economic effects are devastating, yet the grape growers' plight turned political when they staged protests in Kavadarci and the country's capital, Skopje, in autumn 2009, and media coverage indicated anger at the government for not protecting them. There has even been an exodus of growers in search of work elsewhere in the country, region and abroad.[53]

To clarify the intentions of my research paper, I would like to say what I am researching as well as what this paper is not. Through a year of fieldwork to officially begin in 2011, I will be researching the effects of privatisation in the wine industry on grape growers in the Tikveš region of FYR Macedonia. This research is driven by

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[51] M6 owns the distribution rights to Coca-Cola and McDonald's franchises, as well as the country's largest beer producer, 'Skopsko Pivo', among others.

[52] 'Na veresija'

[53] Some have even continued to work with grapes, but in Italian vineyards, for example.

three primary concerns: First, to study how the privatisation of wine production has altered the 'social relations of production'—the invaluable reciprocity and social aspects of work; second, to record how growers' notions of selfhood, pride and integrity have changed as a result of degrading economic conditions; and third, to find out who the power players are beneath the surface of privatisation and how international development agencies and policies have played a role in this transition.

What this paper is not is purely ethnographical, as I have yet to conduct my fieldwork and it is better suited at this point to a suggestive case study of sorts. Despite the popularity of the topic of property in post-socialist Eastern Europe, this paper is also not an assessment of property in FYR Macedonia—for reasons to be addressed shortly. Lastly, it is not a policy proposal, though I hope it and my future research will incite thought on the neoliberal foundation of *laissez-faire* economics, and re-consider the implications of its implementation on rural communities such as those in Tikveš.

What this paper will attempt is to outline a relatively recent process in the Tikveš wine region. It is also an attempt to explain what forces are at play, and the confusion as a result of modern, 'open-market' philosophies and ways of approaching problems. It is also an explanation of how the former Yugoslavia differs from more recent members of the EU such as Poland, Hungary, Romania and Bulgaria, giving examples from the ample research done there since the 1990s. Lastly, I will attempt to address how FYR Macedonia might fare under the Common Agricultural Policy upon its admission to the EU.

Given the legacy of Soviet socialism among the more recent members of the EU from Eastern Europe, it is worth highlighting the differences between the former Yugoslavia and those countries, and why property is not a significant post-socialist issue in FYR Macedonia. Several sociologists and anthropologists have done significant work in the countries of the former Eastern Bloc precisely because these countries underwent a radical post-socialist property transformation in need of understanding prior to their Western and EU integration. Except for Poland, nearly all agricultural land in countries of the Eastern Bloc was collectivised under socialism. Private property was stripped from its owners, individuals were sometimes displaced and forced to work on land cooperatives, and myriad communities' existence came to depend on the top-down economic structure which connected farmers and workers to domestic and foreign socialist markets. In Yugoslavia and what is now FYR Macedonia—the poorest of the former Yugoslav republics—collectivisation was initiated but abandoned without ever being realised, and the republic received significant agricultural subsidies from its northern neighbours. The result was rapid industrialisation and a standard of living that surpassed anything farmers had had prior to World War II, and which crowned the socialist world in terms of opportunity and travel.

I discuss such history because, since the dissolution of Yugoslavia, the standard of living created under decades of socialism has decayed. Given decreasing subsidies, this has been a natural process. Yet combined with privatisation and market forces, it is proving devastating to farmers. What lies underneath this mix are changing perceptions of moral and political economy, including power relations, as well as buying power. In the context of farmers' lives in Tikveš, I have learned through my

stay there this summer that there is an increasing perception among farmers that their work is in vain, and that unregulated, so-called free markets need to be put in their proper place. To borrow from the mid-20th century economist and father of economic anthropology, Karl Polanyi, these forces need to be 're-embedded' (Hann, 2006, p.7), and regulated. Overall, as economic anthropologist, Chris Hann, has noted in his work in Poland and Hungary, enthusiasm for privatisation and a weak state unconcerned with equality and a healthy standard of living leave many in post-socialist countries concerned. It is as if 'the community must give way to the sovereign individual' (Hann, 2006, p.13).

From a free-market economic perspective, this is a step in the right direction—individuals must be just that, and rationally produce and consume within their limits. Yet anthropology yields deeper insight into the convoluted logic of the market in Southeast European societies such as FYR Macedonia. For while the main task of the EU in most applicant countries will be 'to reduce the serious over-reliance on agriculture and overcome the major socio-structural problems' (EC Agriculture and Enlargement, Archived), such socio-structural problems are not only deeply entrenched but reflections of cultural customs and values. What is ironic about the implementation of foreign economic policy is that economic knowledge is not just a one-size-fits-all product of a scientific community, but is often taken from local folk practices (Gudeman & Rivera, 1990). In other words, market behaviour is a reflection of local customs, values and social relations. Therefore, worth asking is whose interest does it serve to regulate and downsize agricultural production in Tikveš? What are we to make of the European Bank for Reconstruction and Development (EBRD) injecting EUR 8.5 million in equity and loans into the country's largest private winery, 'Tikveš', to make it more competitive (Coretchi, 2009)? Where does such an advantage leave smaller wineries vying for market share, and farmers growing their grapes for them?

Privatisation may yield benefits to the region and country, and while the 'Tikveš' winery in Kavadarci still gets the majority of its grapes from 2,000 farmers coming from mostly family-owned farms[54], the changing economy there means individuals throughout the region are being forced into contracts regulating what they grow, not being compensated for their crop and consequently struggling to make ends meet. Socially speaking, the scenario is not new and includes an increase in what Hann has described elsewhere as local dependencies in terms of reciprocity—a 'shared poverty'—yet is unfortunate in that it is perceived to be 'both less efficient and less equitable' (2006, p.29). While such solidarity is indicative of a strong moral economy, the post-socialist transition to a democratic, free-market society is a poor substitute for the social and economic security guaranteed under socialism. In Hungary, Hann has even observed this recently via a strong anti-Europe sentiment, where despite CAP subsidies, farmers have seen land privatised and exploited by foreign, mostly Austrian interests (Hann, 2006, p.88). Naturally, with EU entry and the Common Agricultural Policy, the ability of individual states to shape economic policy has thus been curtailed (Hann, 2006, p.116).

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[54] Information gathered from the Tikveš winery's wine tourism manager, during a visit there in May 2010.

As a result, social changes are in fact occurring due to such 'shared poverty' in East European rural communities. Given that agricultural production is an 'intensely local process' (Dickens, 2007, p.348) and a 'carrier of historically constructed meanings, both intimate and political' (Friedberg, 2004, p.10), growers have social ties to their produce that extend beyond workers producing other commodities. In Tikveš, what is occurring is a transition among these relations of production, whereby the same sort of grapes in different locations and commodity chains are experiencing a change in their pre- and post-harvest production. Therefore, there is concern that when the country joins the EU, competition increases and CAP subsidies decrease as planned[55], such small scale production as exists given small family-labour plots will have no future and that a way of life will be lost.

As a segue to my conclusion, anthropologist David Kideckel (1995) has observed in Romania that agriculture is a unique branch of industry because land is a fixed and limited resource, influenced by local customs and conditions which growers cannot quickly adjust to external demands such as those imposed by 'development' priorities. Yet such priorities are precisely what the EU has in mind.

Tikveš in the EU—preparation for the global market or a return to the peasantry?

I would now like to discuss further how FYR Macedonia's Tikveš wine region might fare under the EU's transition scheme and Common Agricultural Policy, and conclude with thoughts on the implications of such policies for employment, production and prosperity for the country.

In comparison with the rest of Europe, Southeast Europe possesses a large amount of rural industry and potential for rural development. This has been duly noted since the end of socialism and the beginning of EU integration, with financial assistance intending to help countries in the region introduce the necessary reforms in line with EU standards (EC Enlargement and Financial Assistance, 2010). Borrowing from the European Commission's website, it is stated that 'Before joining the EU, a country must have a functioning market economy, as well as the capacity to cope with competitive pressure and market forces within the EU; assistance is therefore provided to support economic reform, leading to economic growth and better employment prospects' (EC Enlargement and Financial Assistance, 2010). But I ask: And what if the reforms do not lead to economic growth and better employment prospects? Research (Beghin et al, 2007) has shown that while the CAP only slightly decreased production and increased costs in the traditional EU-15 countries upon its introduction, the ten new members (NMS) who entered in 2004 saw substantial increases in costs with various changes in production—though often an increase in production for export

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[55] By the beginning of the next funding cycle in 2013, the share of traditional CAP spending is projected to decrease significantly from 48% to 32% of the EU budget.

but with an overall decrease in domestic consumption. Restructuring for a country such as FYR Macedonia will likely result in the same, yet will also continue to mean layoffs in the industrial sector, shifting more individuals back into agriculture (Totev and Shahollari, 2001).[56]

The EU pre-accession scheme now in place is the European Bank for Reconstruction and Development's Pre-Accession Assistance (IPA) process. Through the IPA, Macedonia received EUR 210.4 million for the period from 2007-09, though for five components, from institution building to rural development (EBRD FYR Macedonia Strategy, 2010). Although agricultural support for current candidate countries has been decoupled and limited compared to that provided to the 2004 NMS countries, the rural development component is outlined in great detail in a 486 page document available online. Highlights from it in regards to the transition in FYR Macedonia's grape production include:

1. There is a downward trend of the land areas under grape production, from around 30,000 hectares in 1995 to 24,300 hectares in 2006. 'This tendency is likely to continue in the future since new plantings and replacements (mainly from the smallholder sector) are insufficient to offset the uprooting of old ones'.

2. In such a small country as FYR Macedonia (25,000 sq. km.), around 25,000 farms are devoted to viticulture—70 percent are individual holdings and 30 percent are owned by private firms.

3. The vineyards are old: approximately 40 percent are two decades old and in need of replacing. 'The assortment of wine grape varieties is inappropriate in terms of quality, location and market attractiveness'.[57]

4. 'Wine grape producers suffer from several management problems. Grape producers do not have the ability to obtain credit, or to influence raw materials supply, exert price control of the grape, and ensure timely payments for their deliveries' (Ibid, pp.70-71).

What we see here is EU policy intent on downsizing viticulture through standardisation and regulation. Whereas in terms of competition, FYR Macedonia stands to fare well with its agricultural production otherwise (given abundant produce and niche markets in SEE and Russia), another study states that 'the only direction in which trade with SEE is expected to occur with EU farmers is in viticulture and the wine trade' (Totev and Shahollari, 2001). That is, direct competition with other EU grape growers and wine producers is expected to challenge the country's wine industry. Further, because the CAP has traditionally rewarded farmers who produce more, larger farms (of which there are few in FYR Macedonia) benefit more from subsidies than smaller ones (OECD, 2010) —a threat to the family-labour farms that makeup the Tikveš region.

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[56] Whether a return to agriculture will coincide with an increase in fruit and vegetable production though remains to be seen.

[57] One reason for this is due to poor new seed supply and the continuation of certain types of grapes which were mass produced during Yugoslavia. However, several small wineries are reverting to older types and boosting demand for these grapes among growers.

Yet to bring things around, it is the last aspect from the EBRD's strategy for FYR Macedonia—the lack of organisation and control among the grape growers—that I would like to finish my paper addressing. For as the admonishing proverb I used at the beginning—'bury the vine and drink the wine'— suggests, perhaps the fault lies partially among the growers. Perhaps they are continuing to plant without concern for changes to come such as through CAP, are in a sense hasty to earn without thought for demand and are thus woefully unprepared for the reality that awaits them. While technical expertise and the distribution of information about this transition in policy and production are much needed, growers continue to plant old varieties of grapes and assume that someone (likely the central government) will look out for their interests. Yet this is unlikely in the short-term at best, and although there is a union of grape growers, it is poorly managed, a perceived political tool and thus gets nor deserves little attention.

It thus becomes apparent that the effects of privatisation and transition in Tikveš are deep-seated and make it essential to look at the balance of power, the social relations of production and local experience with the transition there. Worth questioning is what happens when the subsidies disappear and growers become subject to external power brokers (governmental or private) with little to no concern for their welfare? Such as Gerald Creed (1999) suggests from his work in a Bulgarian village, is it a case of 'turning villagers back into peasants' (p.233)? Research suggests that rural areas have indeed returned to subsistence farming since the downfall of socialism given their exclusion from or inability to compete in larger markets.

FYR Macedonia is unique for many reasons already stated, but also because the privatisation process in agriculture has occurred much later—within the past decade primarily—compared to neighbouring Bulgaria and the other countries of Eastern Europe studied by so many scholars since the 1990s. There is much to be learned from their studies, but it is the goal of my fieldwork to focus on how such variables as economic policies, local power relations, as well as the experiences and perceptions of the growers in what is essentially a Mediterranean society in the former Yugoslavia are affecting the transition and being played out. Only this will give a clearer picture of the implementation of privatisation and EU policy, the true transition and its effects on the identity and livelihood of growers in the Tikveš wine region.

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Judicial Review of Administrative actions in Albania: A short overview in the light of recent developments

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1. Introduction

Ensuring a good-governance and effective decision-making of public administration, along with the judicial control over administrative bodies, is considered one of the cornerstones of a governing based on the rule of law. The latter is one of the political criteria that Albania has to follow in order to fulfill the required tasks set forth in the Association and Stabilization Agreement signed between Albania and the European Communities and their member states. Article 78 of the Agreement (2006, p. 74) proclaims that parties should aim at strengthening the rule of law, among others by strengthening the independence of the judiciary and improving its efficiency. In this regard, as part of the EU integration process requirements, efforts in complying with the abovementioned objectives are part of recently developed policies and legislative processes in the past 10 years in Albania.

This paper's scope is to address some legal opinions on of the current legal framework of judicial review of adminsitrative acts, as well as the controversies in adopting new structural changes, mainly related to the establishment of Administrative courts as part of the Albanian judicial system.

2. Basic standards of judicial review

As an important part of the integration process, in order to meet the Copenhagen criteria, the Albanian Government has to undertake several legislative reforms in most relevant fields, especially in relation to establishment of the rule of law. In this respect, a specific importance is to be attributed to its subprinciples such as separation of powers, fundamental rights, legal certainty. Article 7 of the Constitution of Albania (1998) states: 'The system of government in the Republic of Albania is based on the separation and balancing of legislative, executive and judicial powers'. This principle ensures that authorities exercising one of the three powers should responsibly act and function, as part of a balancing and controlling mechanism. In this respect, establishing judicial bodies for placing limits on the exercising of executive powers is an important aspect of the application of the rule of law. According to Claes (1995) 'Judicial Review or judicial control can be defined as the competence or power of courts to control that the other state branches do not overstep the limits of their powers, thereby encroaching upon the prerogatives of other organs and that they do not infringe the

rights of individuals.'(p.109) Based on this reasoning the judicial intervention into administrative activity has been seen both as a way to enhance the separation of powers as well as to make sure fundamental rights will not illegally be infringed by any executive central or local administrative authority.

From the European perspective, the judicial review of administrative acts is also seen as an essential element of the system of protection of human rights. Woerling (2005, p. 2) states that at the same time the judicial is an indispensable instrument to enhance the quality of administrative action and ensure good governance. Moreover, it is a requirement for the developing economies, to ensure the security of international trade and investments which require public decision-making bodies will be subject to effective means of redress.

Moreover, in relation to the Council of Europe's framework, there could be found several recommendations of the Council of Ministers such as Rec. 2001 (9) and Rec. 2004 (20) which have had essential influence in setting the minimum standards for judicial control of administrative decision-making. These recommendations, especially the latter, are mainly focused in building a judicial system of control over administraive action which better suits the requirements of the rights guaranteed by the European Convention of Human Rights.

3. The current system of judicial review

Having a brief look into the actual form of judicial review of administrative acts in Albania it should be stated that this duty is performed by the jurisdiction of ordinary courts. The system of judicial control, is composed of a three level system based on twenty-nine district courts, six courts of Appeal and the Supreme Court as the highest instance of appeal. Based on a Presidential decree (1996) for the adjudication of administrative cases in the first instance, special sections have been created within 17 of the district courts (1996), having extended territorial jurisdiction in order to cover the areas of other district courts. In these courts the sections are composed of a number of two to eight judges who adjudicate on administrative cases.

According to Sadushi (2005, p.259) the Albanian system of review is a mixed one, combining the control over the legality of the administrative action as in common law countries and the system of *full jurisdiction* aiming to scrutinize not only the conformity with law, but also includes the right to change the administrative act based on the assessment of facts in a given case. The Code of Civil Procedure (1996) has provided a distinctive procedure for judicial review of administrative action in articles 324 to 333. Article 324 of the Code refers to the right of the plaintiff to challenge an unlawful action of administrative bodies for annulment or changing, as well as the right to claim issuing of an administrative act or failure in considering the case within the legal deadline. This means that even in cases of omission, the right of appeal to court is clearly guaranteed. In principle, the plaintiff can challenge the administrative decision to the court, after exhausting all possible administrative appeals, namely making use of the hierarchical control.

Also, when procedurally assessing the facts of the case, as the Code of Civil Procedures acknowledges, the court is bound to the principle of presumption of the legality of the administrative action. Article 325 of the Code defines that the plaintiff has to argue upon the illegality of the action and ground his claims before the court. This means that the burden of proof belongs to the plaintiff and the administrative body is only obliged by law to cooperate in submitting the required information to the court. Moreover according to the Code, the territorial competence of the courts is established based on the criterion of the locus of the administrative body issuing the administrative act, not the locus of residence of the claiming citizen. This makes the system more oriented to facilitate the process for the administrative body than for the plaintiff. From this perspective, even article 327 which at first sight seems favorably to the claiming party in setting the 30 days time limit for finishing the procedure and delivering the decision on the matter, sounds idealistic, since based on the complexity of cases, and the caseload of the courts, the whole process will require a longer time. Until now, this article doesn't seem to have been applicable in practice.

Besides the abovementioned clauses, this system has brought several application difficulties and controversies in interpretation. In principle, only individual administrative acts can be judicially challenged. Article 326 provides a clear example of this, defining the exclusions from judicial review. Among others, the article clearly states that normative acts, unless they violate fundamental rights and other interests protected by law, shall fall out of the court's jurisdiction. This article also considers out of jurisdiction, acts related to the appointment or dismissal of public officials and acts which fall in the jurisdiction of the Constitutional Court.[58] Courts of the ordinary jurisdiction have been cautious in using this article, and mostly refrained from accepting claims objecting normative acts, unless there is a *prima facie* violation. In relation to the second exception, by Decision 25 dated 13.2.2002 of the Constitutional Court, the approach on the right of access to court of public officials has slightly changed into the enlargement of the circle of officials who can access the court. This article also deviates form the European standards considering that Rec. 2004 (20) provides only a very small number of exceptions from judicial review, namely acts in the foreign affairs field, international relations, defense or national security.[59]

4. The proposed reform : Advantages and drawbacks

The findings on the current situation show that there is a need to improve the system in order to enhance the efficiency of the system. During the last three years, some government initiatives supported by OECD and the EU, are aiming to bring changes into the current system of judicial control on administrative activity. Changes consist in a procedural reform, namely creating a distinctive procedure for judicial review of administrative action followed by a separate administrative jurisdiction. What is important to consider is that all proposed changes must be estimated in accordance

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[58] See Decisions of the Constitutional Court No. 20 dated 11.07.2006, No. 24 dated 24.07.2009 and No. 17 dated 23.04.2010.
[59] See SIGMA (2008) *Policy Paper on drafting the new law on administrative disputes: Reforming the general administrative law framework*, SIGMA Papers

with the current conditions of the judiciary in Albania and the goal of enhancing the quality of services performed by the courts.

Besides the commitment of the government to follow up the process, also most of NGOs protecting business rights are constantly lobbying for reforming the changes into the judicial review of administrative action due to the excessive long proceedings before the district courts and lack of relevant expertise of judges. According to SIGMA report (2008, p.8) 'expectations are high (perhaps too much so) for a system of administrative courts, which is expected to bring about new and specialized expertise and more efficient and faster procedures when (and if) it is established.'

Nevertheless, when thinking of carrying out reforms in the system, respective pro and cons are to be considered. One of the most important priorities of the separated administrative jurisdiction will be the fact that the judicial control will be performed by specialized judges who will establish unified practices in managing the process. This enables the application of legal certainty, so that similar cases will be considered similarly. Specialized judges also have the appropriate skills to make well-reasoned decisions. Thus, for the parties involved in proceedings before the court it will be easier to psychologically accept the decision-making process. This will enhance the authority of the judiciary in general. Moreover, specialized jurisdictions are aimed to deal with a case in a shorter period of time.

On the other hand, although a separate jurisdiction in administrative matter is aimed to ensure an efficient and specialized conduct of judicial proceedings in a reasonable time, this scope can also be achieved by other means, within the current court system. For instance, the excessive length of proceeding could be resolved by reorganizing the current system, in a way that a larger number of judges will adjudicate administrative cases and that they will periodically undergo to trainings and relevant qualifications. Another possible disadvantage of the autonomous administrative jurisdiction will be the reduction of the access to court. According to EURALIUS recommendation (2006) 'The number of cases in the special field of jurisdiction usually justifies a far lower number of such courts than there are in the ordinary court system. The costs of access to court will grow, because parties from remote areas will face difficulties in reaching the nearest competent court, given that many cases are resolved after several sessions and the amount of money and time will increase accordingly.'(p.18). Additionally, longer distances make the process of notification of the parties more difficult. This may cause a violation of the right to an effective remedy, as provided by Article 13 of the European Court of Human Rights.

As reported by EURALIUS (2006, p.15) different models chosen by the countries indicate that a totally autonomous administrative court system requires a higher amount of cases. As the amount of cases correlates to a relevant extent with the size of the population, smaller countries will rather leave the last instance jurisdiction with their highest court of the ordinary court system. (p.16) Despite the lack of statistics, the recommendation shows that in all three levels of jurisdiction the caseload on administrative disputes in Albania is not that high to justify a separate jurisdiction. There are only two district courts with a percentage of administrative cases of more than 10%.(p. 27) Furthermore, in some small district courts the remaining number of

cases will be relatively low and losing the administrative jurisdiction would possibly jeopardize their existence. The EURALIUS recommendation clearly doesn't advise the creation of administrative jurisdictions. Instead it recommends that the first instance of administrative jurisdiction should be shifted from the district courts to the appellate courts, where administrative chambers should be established. Another source of analysis, the SIGMA policy paper (2008, p.8) proposes another system composed of four regional administrative courts of first instance and one Appellate Court seating in Tirana, which will be the last instance of appeal, dealing with matters of law and facts. The draft-law proposed to the Parliament "*On organization and functioning of administrative courts and judgment of administrative disputes*" establishes a system of at least 6 administrative courts of first instance (Art. 4.2). However the exact number of courts will be specified by presidential decree. One administrative Court of Appeal will be established, which will have to deal with all cases coming from administrative local courts. The Supreme Court will remain the last instance of appeal. In this regard, the proposed draft does not exactly follow the recommendation of EURALIUS or SIGMA and tries to establish a moderate system of judicial review. However, regarding the structure of the system, the concentration of appeals in the Administrative Court of Appeal, as the sole instance of appeal,will require a large number of judges. Furthermore, since the Supreme Court will still have the last say, plaintiffs will have to face long proceedings even before this court.

The proposal provides a system of *full jurisdiction*, which is typical for autonomous administrative jurisdiction, where the court has to assess matters of law and facts. In comparison with the actual system, the draft authorizes the judicial review of normative administrative acts on a clear legal basis without placing barriers of control. According to article 8, disputes related to this kind of administrative acts will fall under jurisdiction of the Administrative Court of Appeal having its seat in Tirana.

From the plaintiff's perspective, main changes concern provisions on granting a qualitative access to court for the individuals. Based on article 2 paragraph 3 the burden of proof has been shifted to the administrative bodies, which will have to protect and prove the legality of their decisions. Related to terms, the draft-law proposes a longer term for submitting a claim to the administrative court, which will be 45 days, changing the actual time limit of 30 days. Preliminary rulings will start within 7 days from the submission of the claim. Also, the first session will be no longer than 20 days from the submission of the suit, a timeframe which actually varies from 1 to 2 months. Another advantage is also that the Administrative Court of Appeal will have to adjudicate on the case within 30 days. What is most important to address is that, the draft introduces a new procedural provision. According to article 29/1 the judgment is based on written acts and there's no need of the parts to be present during the proceedings. This means that the absence of the parties doesn't cause the cessation of trial and that the main scope of the proceeding is scrutinizing the alleged legality of the administrative action.

5. Conclusion

At last, it should be stressed that proposed changes must be estimated in accordance with the current conditions of the judiciary in Albania, together with the goal of

enhancing the quality of services performed by the courts. Changes will be accompanied with the demand to engage human resources with relevant expertise and other additional costs for building the appropriate needed infrastructure. Although the need for adopting this law has been emphasized by the Progress Report of the European Commission (2009, p.10), the drafting speed imposed by the European approximation agenda shouldn't risk the quality of the adoption of a well-contemplated reform on judicial review of administrative action.

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The boundaries of law: an approach to freedom of expression based on intercultural dialogue

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1. Introduction

There is no doubt that all kinds of expression can be, depending on the context, considered as blasphemous, offensive or shameful. In the 19th century, it was scandalous, to exhibit Manet's *Olympia* or to read Baudelaire's *Fleurs du Mal*, as it is scandalous in Iran today to show a woman on screen without wearing a headscarf (Pierragia A-H: 2010). Should we pretend then that every society has its own rules? That cultures should stay "cocooned"? Or that a state should constitute a *legibus solutus* entity, above all obligations *international* law prescribes? Rather not.

The need for international cooperation in the globalization context is essential. Both the *Satanic Verses* and the *Danish cartoons* controversies illustrate the failure of contemporary societies to build "societies of peace". In this context, international organs and instances (notably the European Court of Human Rights), have applied many efforts to "resolve" the conflict between freedom of expression (FoE) and cultural sensibilities. However, the extreme variety of domestic standards, as well as the political and diplomatic aspects of the problem, lead us as to assert that law is not necessarily the appropriate "forum" to resolve this kind of "cultural", conflicts.

With these considerations in mind, we will try, in the first part, to examine this "failure" of international law in its struggle to respect both FoE and respect of sensibilities. In the second part, we will focus on the need to elaborate alternative methods of conflict resolution, based on respect and dialogue.

2. The inefficiency of law to resolve conflicts related to freedom of expression

We will first refer to the difficulties of the States to assure freedom of expression in the first place. We will then focus on the difficulty of strike a balance between FoE and sensibilities.

A. Difficulties in complying with international standards

Freedom of expression is a principle *'of paramount importance in any democratic society[…] also applicable to ideas and information that offend, shock or disturb'*(UN HRC:1996, and similarly ECHR: 1976). International standards provided by the

Universal Declaration on Human Rights(1948), the International Covenant of Civil and Political Rights (1966), the International Covenant on Economical, Social and Cultural Rights (1966) and the European Convention of Human Rights (1950) guarantee FoE and free flow of information, as well as a positive obligation of States to ensure pluralism and access to information and culture.

However, the attitude of States towards these standards varies. For instance, countries are free, to sign or not a conventions, and they are also free, by the means of reservations, to make international law subject to their national law. For instance, Saudi Arabia, Malaysia and Singapore have neither signed nor ratified the ICCPR, Cuba has signed but not ratified it, and Egypt explicitly refers, in its reservations, to the supremacy of the *Sharia*.

As a result, in most illiberal countries, domestic laws fail to provide legal means to defend freedom of expression. In Islamic republics in particular, defamation of the Islamic religion and blasphemy can be punished by death sentence(SIDDIQUE et al:2008). The six-year prison sentence pronounced again Tibetan filmmaker *Dhondup Wangchen* for his film «*Leaving Fear Behind*» in 2009 and the arrestment of the Iranian film maker Jafar Panahi in May 2010, are two recent examples that illustrate this intolerance.

But even in liberal countries, it is very difficult to claim that freedom of expression is always respected. Minorities are the first victims. For example, despite the continuous convictions by the European Court, Turkish courts regularly consider the Kurdish question a threat to national stability or an incitement to hatred and do not hesitate to condemn internationally recognized authors such as Orhan Pamuk for incitement to hatred, hostility or terrorism (for instance ECHR : 2000, 2002, 2010) and Greece, regularly refuses to register minorities' cultural associations that want to establish their freedom of expression in Greece (for instance ECHR : 1998, 2005, 2008). Moreover, in European countries, such as Italy or Moldova, monopolization of media has become a serious threat to pluralism (COE: 2004) and speech is restricted on the grounds of protecting personality[60], public morals and sometimes, as in Russia (ECHR:2009), on the ground of incitement to religious hatred.

In fact, interpretation of legal standards is always open to regional or national interests and cultural sensibilities. For instance, Europe is particularly attached to the protection of sensible historical matters: it is contrary to the article 17 of the European Convention of Human Rights to argue about the holocaust(ECHR:2003a), as it is punishable in EU member states to deny crimes of genocide (EU: 2007). On the contrary, Israeli courts have considered Wagner's music playing by their national opera offensive (Cohen – Almagor: 2006). As French courts have considered offensive a criticism on Catholicism's position towards Jews an incitement to racial

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[60] See Article19 (2009) "Civil Defamation: Undermining Free Expression", NGO Report, London.

hatred(ECHR: 2001) and Greek courts have considered offensive a comic book where Christ smokes hashish (Greece: 2003). In the US, the "cultural wars" about the funding of controversial art, had as a result that the Supreme Court considers that the Mayor of New York had the right to stop funding the exhibition "Sensations' because it included works like Chris Ofilii's *Virgin Mary* and *Piss Christ* (US:1998, 1999).

However, the US is the sole case where freedom of expression is privileged in a rather absolutist manner – at least in terms of State intervention- by virtue of the First Amendment clause. Since, as Justice Harlan put it in the Cohen v. California case, '*one man's vulgarity is another's lyri*c' (US: 1971), in the US laws restricting free expression should allways be *content- neutral*. The US Supreme Court only exceptionally allows restrictions, based on the notion of "harm", rather as on the notion of the "offense": for instance, hateful speech is prohibited when it amounts to "fighting words" (US: 1942) or to incitement to "imminent lawless action"(US: 1969). Even "morals" are to be interpreted narrowly, according to the Supreme Courts's test of "obscenity" (US: 1973), providing a defense for all works with a serious religious, political, scientific, educational, journalistic, historical, or artistic value. Furthermore, the Supreme Court has judged, as early as 1952, that religious are not covered by constitutional protection and that a state has no legitimate interest in protecting them(US: 1971). Likewise, in 1991, on the occasion of the film "*The Last Tempation of Christ*", the Supreme Court refused to examine the complaint, arguing that "[*the right interprertation of the life of Christ] is not a justiciable question before the Court*".

B. The difficulty of striking a balancing between freedom of expression and sensibilities

A first cause of difficulty is that international law itself contains a certain ambiguity in its standards. For instance, both article 19§3 of the ICCPR and article 10§2 of the ECHR provide that the exercise of the right to freedom of carries with it special *'duties and responsibilities*' and may be subject to certain restrictions, specifically referring to the '*respect of the rights of others*'. But who are these "others"? And which are the criteria in order to determine the existence of the offense? Such solutions are not provided *in abstracto*. They rather depend on the national law and contexts. As the European Court puts it, there is a certain margin of appreciation for the states in order to determine what is offensive and what is not for not. In its famous "Red Book" case, the principle of freedom of expression '*is also applicable to ideas and information that offend, shock or disturb';* however, *'it is not possible to find in the domestic law of the various Contracting States a uniform European conception of morals'*(ECHR: 1976). This means, that according to the European Court, the "margin of appreciation" of the States to determine what is offensive and what is not, is particularly large when sensible matters are at stake, namely morals or religion. Moreover, according to the Court, a certain "vanity" marks all effort to seek common standards in such matters. This was shown in three cases, involving a conflict between FoE and religious sensibilities. For instance, when Mr. Choudhury filed a complaint under article 9 of the Convention, claiming that he had been offended by the publication of Salman's Rushdie *Satanic Verses,* the Court refused to examine it, since

the UK was, at the time, repealing blasphemy, but only against the Christian religion(ECHR: 1998). Also, in two cases - concerning a satirical film and a 18minutes video respectively, both considered to be "offensive to Christian seinsibilities - Otto Premingen(ECHR: 1994) and Wingrove(ECHR: 1996)cases- the Court illegitimately concluded to the existence of a right to a "non-offense" in one's sensibilities from article 9 of the Convention (Wasschmann:1994).

Furthermore, some recent restrictive tendencies have been observed within the jurisprudence of the European Court(Noorlander, 2008). A characteristic example is the Eskalitza case, where the banning of a caricature with the slogan *'we all dreamt of it.. Hamas did it'* in a Basque journal a few weeks after 9/11 was found unanimously not to violate article 10, on the grounds of law protecting against incitement to terrorism (ECHR:2008). We could also refer to the dissident opinions in the Bildender Kunstler case, which considered that a painting representing in an "indecent" manner a renowned right-wing Austrian politician and Saint-Teresa should not have the right to be exposed(ECHR:2007), as well as the LeRoy case (ECHR: 2008a), where the protection of personality of Jean Marie Lepen was considered of greater importance than the freedom of expression of an author who wrote a fictional novel (ECHR:2008).

2. Alternative methods of conflict resolution based on intercultural dialogue

We will question now in this second section why alternative methods of conflict resolution are necessary in order to ensure cultural and religious pluralism, why they are sometimes even more necessary than jurisdictional procedures and which could be these methods.

A. Why alternative methods of conflict resolution are necessary

In our view, in a multicultural context, the problem of offensive speech is relates to main issues of contemporary societies, such as migration and islamophobia, and has foir this reason be regarded in a global perpsective. It is argued that FoE matters such as blasphemy cannot be resolved by the obvious triumph of the FoE principle over the respect of religious sensibilities in every liberal society. They should rather be regarded as failures of the contemporary societies to build and develop ways to respect for each other. Respect in this sense, is neither interference nor ignorance; there are more "delicate" ways of resolving conflicts, and the contribution of other sciences to law can be particularly useful at this respect.

The danish cartoon case proves precisely that even when the FoE principle "triomphes", controversies are not avoided. More precisely, in European courts concluded, legitimately, that freedom of expression should prevail over the right not to be offended in one's religion: in Denmark, the prosecutor closed down the cartoon case, ruling that *'a drawing of the Prophet Muhammad cannot in itself constitute a*

violation of [...]the Danish Criminal Code'(Danemark: 2006) and in France, the First Instance Court of Paris acquitted the journal Charlie-Hebdo ruled that '*given that the case concerns a satirical journal (...) in a secular and pluralistic society, the respect of all convictions goes along with the freedom of criticism, whichever they are'.* Also, when the European Court had the occasion to examine the issue, in the case *Ben Al Mahi and others*, it decided not to do so(ECHR: 2006). However, the recent controversies over "Southpark" show[61] and the cartoons contest on "Facebook"[62], including once more the question of the legality of the depiction of the Prophet Mohamed, prove that the problem continues, reaching a paroxysme. The aftermath of the cartoons, taking into account the violent reactions largely diffused by the media, vindicate those who, in the aftermath of the Danish cartoons controversy, brought up the question of a 'new kind of global crisis', (Favret- saada, 2007; Nørby Bonde, 2007). Naturally, under these circomstances, the United Nations Special Reporter on FoE at the time, Mr.Ligado, after his visit in Danemark, observed a mounting of xenophobia(UN:2005).

B. The empowerment of civil society, institutions, NGO's and specialized organs of the UN.

One solution would be to address the problem within specialized institutions on cultural rights; specialized organs should be created. For instance, the creation of an International Cultural Rights Institution or a specialized intergovernmental Committee, inspired from the model of the UNESCO Committee that facilitates negotiations within countries in order to restitute cultural property (CORNU: 2009). In this respect, the construction of quasi-jurisdictional instances, or open forums of dialogue among countries' representatives could be a first step. Interreligious dialogue could also have a central role. Or, as highlighted by the Venice Commission(COE: 2008):'it is not exclusively or even primarily for the courts to find the right balance between freedom of religion and freedom of expression, but rather for society at large, through rational discussions between all parts of society, including believers and non-believers'. Prevention being the key of conflict resolution, another paradigm of alternative conflict resolution could come from the criminal sciences field, and in particular the restorative justice procedures, mainly applied in criminal minors law (Braithwaite, 2001).

3. Conclusion

In today's multicultural societies, the boundaries between cultural sensibilities and law are not clear, especially as far as the relation between international law and religion is concerned. Law should be assisted by other sciences in its mission to assure social cohesion, and develop innovative ways of conflict resolution, at an ideological, as well as at an institutional level.

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[61]   See Anon. (2010) South Park creators warned over Muhammad depiction, *BBC news*, news.bbc.co.uk, Thursday 22 April 2010.

[62]   See Anon. (2010) Pakistani court orders Facebook blocked in prophet row, *BBC news*, news.bbc.co.uk, Wednesday, 19 May 2010.

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The Impact of International Financial Crisis on the Euro Adoption in Central and Eastern European Countries

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1. Introduction

The paper presents the evaluation and measures undertaken by central banks and Governments from CEE countries, in order to regain the confidence in the financial system and to prevent the repercussion of the international crisis' negative effects on the real economy. The international financial crisis made a change in attitude concerning euro adoption: the wave of speculative attacks on CEE currencies and the increasing threats to their financial stability prompts some governments to prefer the "shelter" offered by the euro. Thus, I analyzed the fulfilment of Maastricht criteria by the CEE countries. Although the Maastricht Treaty doesn't stipulate explicitly real convergence criteria for the CCE countries, I presented the GDP convergence, the wages and prices convergence, the degree of economic openness.

2. The impact of international financial crisis on CEE countries

Economic and financial crisis today seems to be unprecedented in the last century half. The economic recession is extending in the U.S., Europe and Japan and it is appearing to be much more painful than the economic collapse of 1981-1982. The current financial crisis has its roots in the dramatically lowering cost of houses in the U.S. or in the fall of housing loan market.

Isarescu (2009) considers that the financial crisis causes are deeper, both of macroeconomic and microeconomic nature. These two types of causes interconnected in the production of the crisis. One of the main causes of the financial crisis was the abundant liquidity created by the major central banks around the world (FED, Bank of Japan). Also, the market was supersaturated with savings, driven by growing integration into the global economy of countries (China, Southeast Asia), with high accumulation, and redistribution of global wealth and income to the exporting countries. Abundant liquidity and supersaturating savings created available resources for investments, including sophisticated financial instruments, not easily understood by some investors.

Daianu (2008) states that at the origin of the crisis was also the fact that the previous experience was not very well fructified in the last two decades: these crises were periods of euphoria, the massive price increase in assets (so-called "bubbles"), the relaxation of prudential standards and greed without measure.

The consequences of abundant liquidity were the very low interest rates and their low volatility. Together, these consequences have led to increased appetite for assets with large gains. In addition, reduced volatility on the market created a tendency to underestimate risk and a real lack of vigilance of investors. On this background operated as aggravating, also series of microeconomic causes: securitization frenzy, cracks in the business model of rating agencies, outsourcing rational in the private but socially inefficient and increased international competition for deregulations.

After triggering the crisis, the central banks have conducted a series of actions destined to restore the lost confidence in the financial system and to prevent the reverberation of negative effects of the crisis on the real economy, which could include:

- FED has increased the volume of swap transactions made with other central banks;
- FED has developed a facility for direct lending to the private sector;
- Central banks have reduced interest rate: FED reduced the interest rate reference from 1% to a range between 0 and 0.25%; the ECB reduced interest rate reference to 2%; the Bank of England reduced the interest rate reference a fifth consecutive time by 1%.
- Billions of USD and euro were injected into the banking system.

Coordinated actions of the U.S. government and EU countries have consisted of:
- Recapitalization of banks;
- Guaranteeing deposits;
- Guaranteeing interbank loans;
- Banks nationalization;
- Establishment of new regulation on the financial markets in full;
- EU envisages a centralized financial supervision;
- The practices of liquidity management are restrained;
- It is improved the prominence of risk and protection against them;
- It is opened a new global financial system.

The Central and Eastern Europe countries have committed to restoring stability by the economic incentives and bank intervention, such as Poland - 24 billion euro to support the economy, the Czech Republic - 2.5 billion euro to support the economy, Bulgaria - 250 million euro capital injection into the bank specializing in small and medium enterprises. Several European countries have turned to the financial support provided by international institutions (IMF, World Bank, EBRD), as follows: Hungary – 19.5 billion euro; Latvia - 7 billion euro; Romania - 19.9 billion euro.

Although such measures have been implemented after 17 months from the moment when turmoil started, the market remained non-transparent; this has boosted the financial crisis. Thus, there are direct and indirect effects of the crisis (Isarescu, 2009): the first ones come from exposure of the banks at the' toxic assets' and the second are

caused by changes in the availability of capital and liquidity conditions, making the financing more difficult. The measures listed have proven to be inefficient, which facilitated the passage of crisis in the real economy, first in the U.S. and then in other developed countries.

Isarescu (2009) believes that in the future the governments will face many challenges. Thus, on the short term, the main challenge is to find solutions to restore the confidence of investors and consumers. On the long term, the main challenge is to adjust the principles that guide the reform of international financial system, mainly related to transparency, to improve regulations on the security of accounts, ensuring proper regulation of markets, companies and financial products, ensuring the integrity of financial markets. Business ethics is not missing from this list of future challenges.

3. The fulfilment of Maastricht criteria by the CEE countries

In present, within EU there are two categories of member states: members with full rights (within euro area) and members with derogation (outside the euro area). Before adopting the euro, accession countries to EMU (members with derogation) must participate in ERM II for at least 2 years. Concerning the countries that joined the European Union in 2004, Slovenia joined the single currency in 2007, Malta and Cyprus in January 2008, and Slovakia entered the EMU in January 2009. However, for the remaining CEE countries there is an increasing uncertainty regarding the timeline of joining the euro zone. Lithuania was refused the admission in the euro zone on January 1st, 2007, because it didn't fulfil the price stability criterion.

The international financial crisis determined a change of attitude concerning the euro adoption. The eight CEE countries aiming to join the euro are bound to face more challenges in their process of entering the monetary union compared to their predecessors. This is because fulfilling the required conditions for nominal convergence is bound to take longer today, as uncertainty in global markets deepens and adverse shocks do not abate. Moreover, the EU and the ECB have grown more lukewarm towards the expansion of the EMU and insist that convergence conditions should be met. Most of the CEE countries are a long way from fulfilling the Maastricht criteria, and the current global macroeconomic environment of increasing inflation and reduction in GDP growth creates additional uncertainty.

Inflation criterion represents the most difficult task to fulfil by candidate countries to EMU. In 2008, all the CEE countries have rates bigger than the reference ones. In 2009, only Czech Republic and Estonia fulfilled the criterion, according to Figure 1. Even in a stable global macroeconomic environment, inflation in the CEE countries would be higher than that of the euro zone, and the current economic conditions create additional challenges for meeting the inflation criterion. Among the factors than make the disinflation process confront to a sustainability problem in the future, we mention the following: necessary convergence process in both prices and incomes to euro-area levels, the continuation of Balassa-Samuelson effect (empirical evidence estimated it between 1% and 4% per annum, see Coudert, 2004), the increase of administrative prices, the application of communitarian acquis in fiscal and agricultural domains, the

raise of nominal wages and the CEE countries would have no choice but to import inflation.

Figure1. Inflation rate
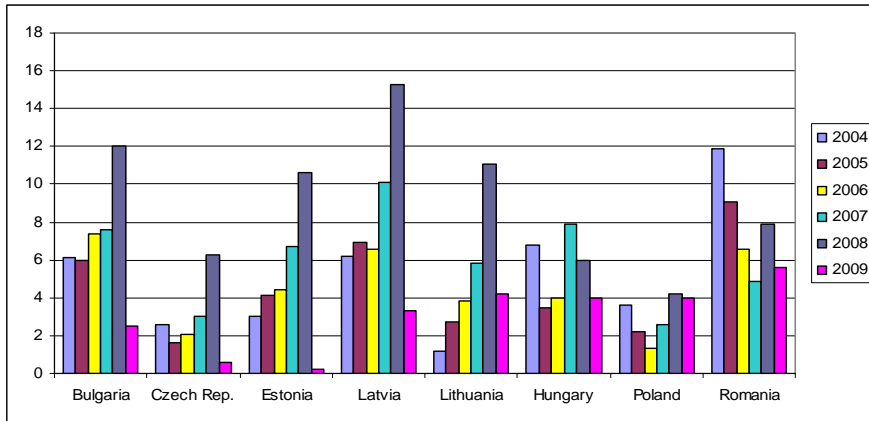
Long term interest rates converge to that of the euro zone as it approaches to the euro adoption. In 2009, there was a growth of long term interest rate in CEE countries, but only Czech Republic and Poland met this criterion. Higher long-term interest rate is explained, among others, by the persistence of large budget deficits (Cerna, 2006), which in recent years has a worrying trend in some CEE countries. This factor has a strong influence on interest rates (Crowding Out Effect) especially if exchange rate volatility is reduced, as it has happened in some CEE countries. In addition, the international financial crisis caused a higher effect on interest rates.

Baltic countries have seen very low levels of budget deficits (Estonia recording even surpluses from 2002 to 2007). Public finances have deteriorated, especially in Hungary and Poland, and the Czech Republic has exceeded the limit at certain times. The international financial crisis led to a worsening situation, according to Figure 2. Economic recession has cut government revenues, while accelerated unemployment increased public spending. These two trends have combined, pushing over the budget deficit ceiling of 3% in most CEE countries. Moreover, CEE countries must cope with numerous challenges that rise doubts concerning their capacity to stabilize the financial situation. This is due to the fact that these countries are in deep financial needs following the accession to the EU, the continuous prices alignment process and the reforms pursued in education, health and social insurance system. Or, a great part of these needs impose serious tasks for the budget. Consequently, the candidate countries should find sound and sustainable financial sources.

Figure 2. Budget deficit/surplus
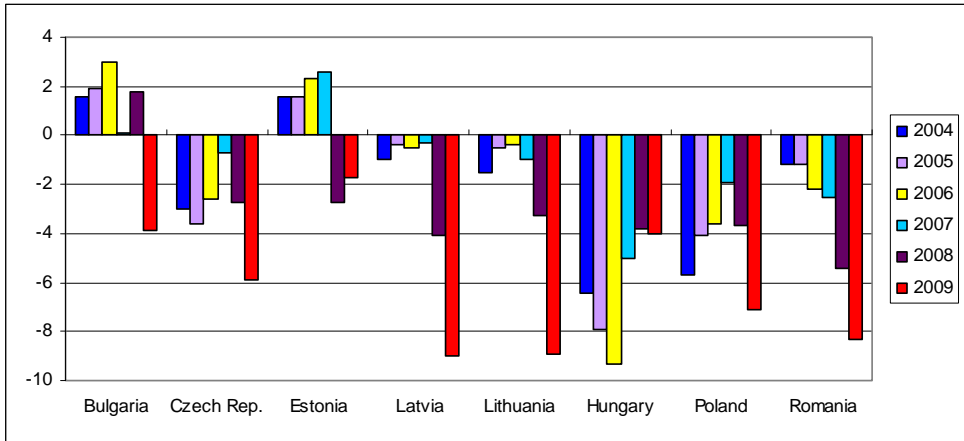
The public debt level which had an average level of 30% of GDP in 2007 is now increasing, but it doesn't exceed the limit of 60% of GDP, according to Figure 3. The modest volume is explained by the fact that, at the beginning of transition, the former communist countries, excepting Poland and Hungary, didn't appeal to public loans in order to cover their budget deficit. This favourable situation risks changing due to the recent growth of the budget deficit.

Figure 3. Public Debt
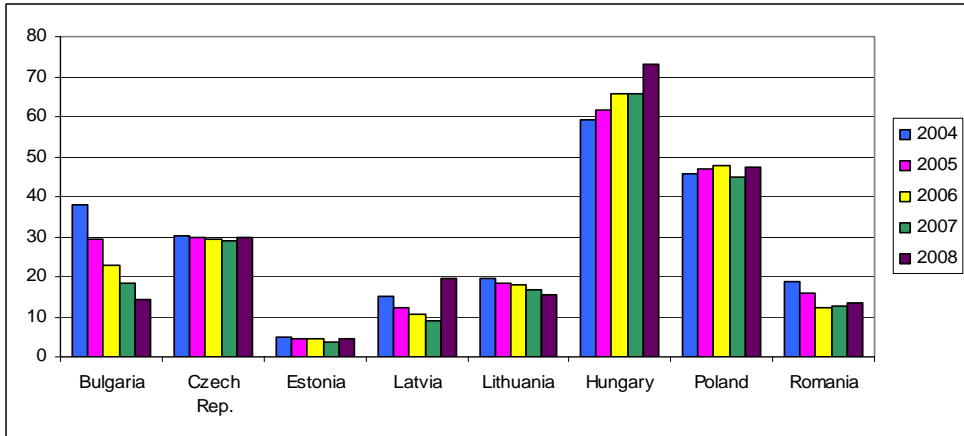
The exchange rate arrangement plays a crucial role in a country's progress towards its EMU accession. Participation into the ERM-II requires a relative stability of domestic currencies vis-à-vis the euro for a period of two years (+/-15%). The evaluation of

exchange rate stability criterion is only possible for ERM II countries, whose central rate is fixed to the euro currency. Baltic countries, members of ERM II, kept their currency board (Estonia, Lithuania) and the pegged exchange rate (Latvia), and the international financial turmoil didn't cause a change of central parity against the euro. Fulfillment of the criterion on exchange rate stability assessment will only be possible after the Czech, Hungary, Poland and Romania currencies join ERM II and the central rate of these currencies against the euro is set. The national currencies of these countries, in late 2008, experienced increased speculation. The wave of speculative attacks and the increasing threats to their financial stability prompts some governments to seek earlier entry into the euro zone, according to Figure 4.

Figure 4. Exchange rate
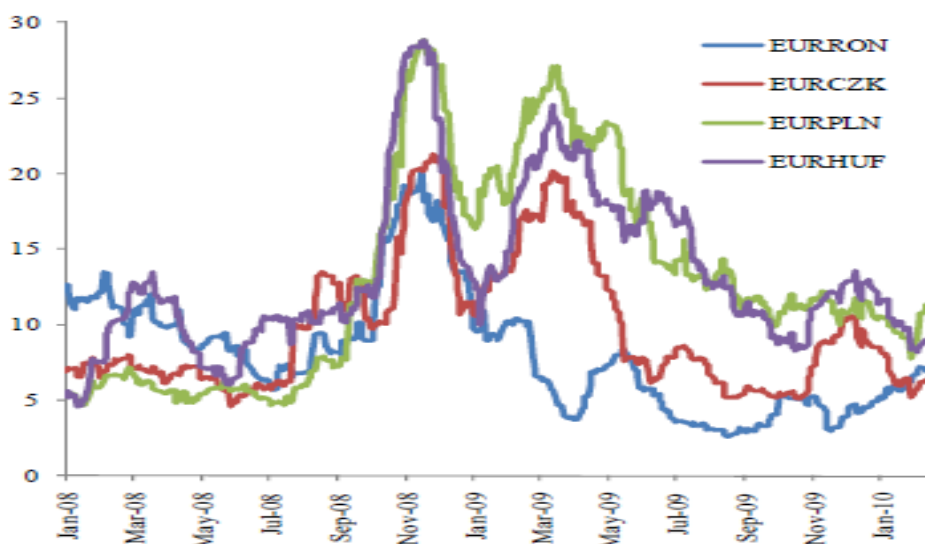
But a major stumbling block for faster euro accession is the Maastricht criteria – which looks more difficult to fulfil, from the perspective of the assuring global economic context. The Economic Community could, in theory, adopt a more permissive approach towards CEE countries willing to adopt the euro, by relaxing/adapting the Maastricht criteria requirements. But not a few influential people in Berlin, Paris, etc might say that, allowing economies with a rather more "fragile" position to join the euro zone would weaken the euro. On the other hand the ECB has both an operational and moral duty to assist central banks in CEE countries in case of need.

4. Real convergence

A difficult task for monetary and exchange rate strategies in CEE countries is to support the parallel pursuit of the real and nominal convergence to the euro area, i.e. to

advance the disinflation process while allowing real income levels and the structures of the economies to catch-up with those in the euro area.

Although CEE countries have experienced rapid and sustained economic development within the recent years, the real convergence process to the EU economy of these countries wasn't achieved, according to data in Figure 5. Czech Republic moves further in comparison to the other CEE countries, reaching to 80% of EU GDP/capita by the end of 2008. Estonia, Lithuania and Hungary follow with approximately 65%. Finally, Romania and Bulgaria have a rate of 43% of the EU GDP/capita.

Figure 5. GDP real growth
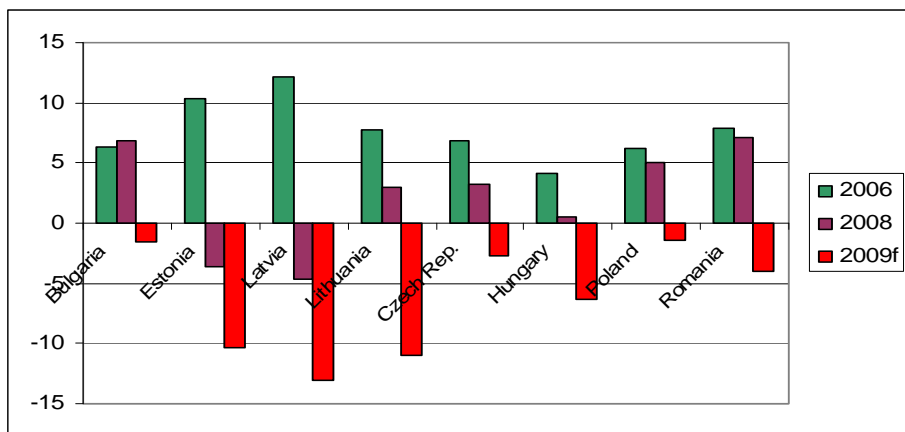
*f–forecast

The contribution to GDP of the three main sectors in CEE countries is somehow similar to that of the EU. There are CEE countries where the contribution of agriculture is more important (Bulgaria, Romania), but the trend of increasing the share of services and reducing the share of agriculture in VAB will continue (see Figure 6).

Figure 6. The gross value-added structure by sectors (%, 2008)
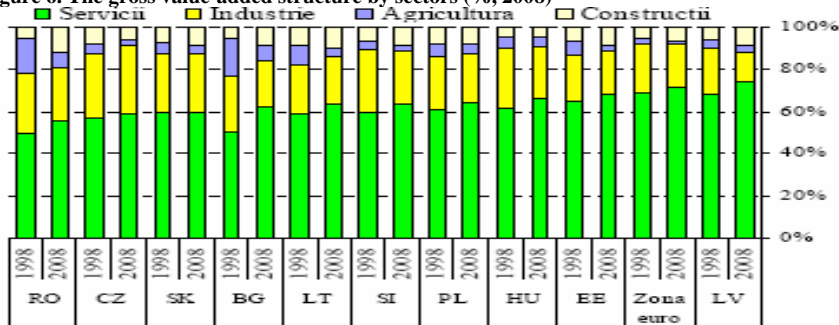
The purpose of wage convergence is more difficult to achieve as the distance to EU average is higher than for the GDP one. In all candidate countries, several factors contributing to the low speed of convergence of wages have pursued. (see Figure 7). Sebea (2004) highlights that the wages convergence is affected by the gap between the time of achieving better economic performance and their reflection in wage increases. In addition, Goretti (2008) considers the following three factors being responsible for wage developments in the new EU member states: caching-up from the unusually low levels; restrictive conditions on the labor market due to strong demand for labor, but also exacerbated by large-scale emigration and public sector wage policies; institutional characteristics of the labor market.

Figure 7. Real incomes convergence (2008)
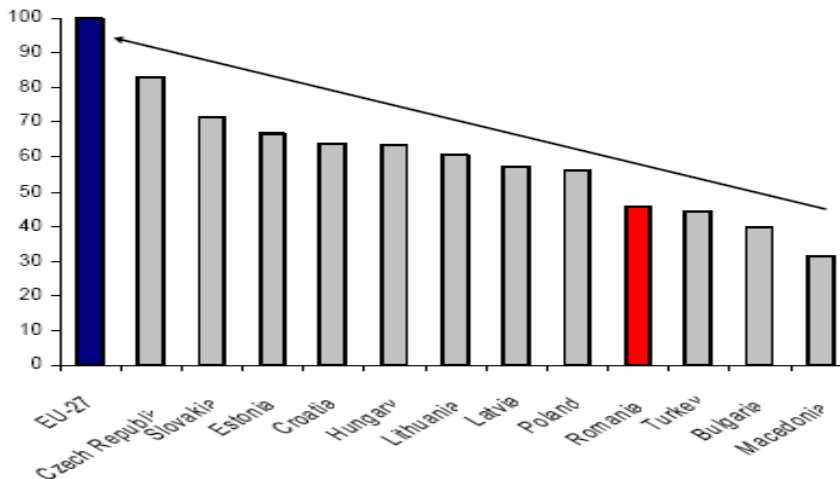
According to the ECB Convergence Report (2010), in CEE countries wages increase should not exceed labor productivity growth and should take into account labor market conditions and developments in competitor countries. While wage growth over labor productivity has been corrected in most countries, since 2005 the real wage growth in Romania has been higher than productivity gains.

Nowadays the differences between prices in CEE countries and the EMU are significant (see Figure 8). Egert (2007) estimated that the price levels would range from 40% (Bulgaria) to 70% (Slovenia) in the euro area average.

Figure 8 Price level
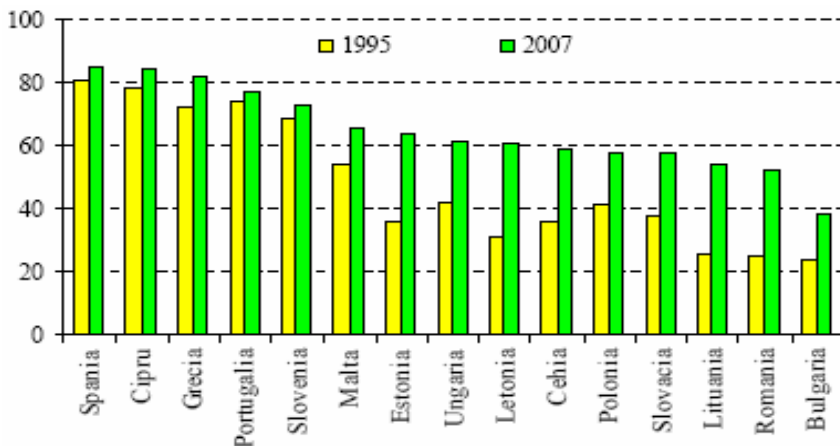
Sebea (2004) considers the following factors in determining price convergence. The first factor is the increase of non-tradable goods price amid the process of catching-up of income and convergence of prices of tradable goods, influenced by trade liberalization and increase its orientation towards the EU. Secondly, an inflationary pressure is expected, due to the adoption of EU rules, and liberalization and adjustment in energy prices or other utilities. Third, the increase of foreign investors demand for real and financial assets can accelerate convergence of prices.

One of the indicators measuring the open degree is given by the percentage of trade balance in GDP. Slovakia, Estonia, Czech Republic and Hungary are small open economies in which the exchange rate plays an important role. In exchange, Poland is a large economy, with the lowest open degree, as outlined in Figure 9. The European Union is the main commercial partner for the CEE countries.

Figure 9. Open degree of economy
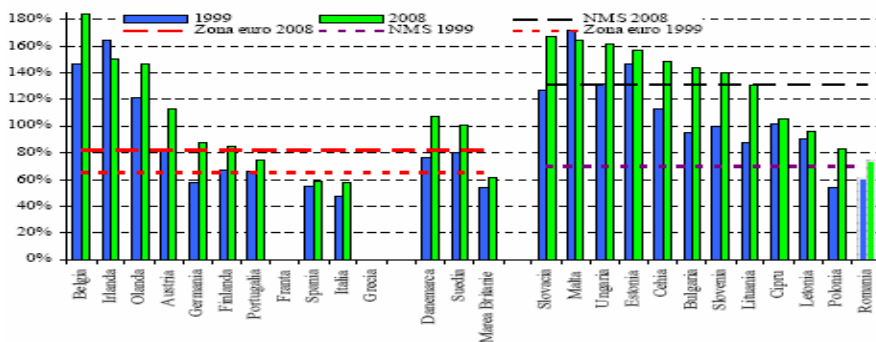
Given the data presented, I would conclude that the real convergence process of CEE countries with the European Union is well underway and will continue for many years, given the existing gaps in many of these countries. In my opinion, the process will continue to be developed more or less uniform, although periods of acceleration aren't excluded.

From the economic point of view, the challenges facing the CEE countries are threefold (Daianu, 2009). The first set pertain to internal macroeconomic conditions: achieving sustainable inflation, reduced exchange rate volatility, prudent fiscal policy. The second set addresses the current global macroeconomic conditions, and the effects of the financial crisis. Third, a set of conditions relate to the institutional underpinnings of innovation and competitiveness. Obviously, the three sets of challenges are interlinked and this is what makes it more difficult for the CEE countries to fulfil the Maastricht criteria.

The Asian crisis which happened a decade ago made some people talk about a "two corner solution" for exchange rate arrangements in order to forestall financial misery. The current financial crisis has underlined the role of reserve currencies as "shelters" during periods of major distress; it is like we are going toward a "single corner solution" paradigm in exchange rate policy. CEE countries are, seemingly, in a catch-22 situation in view of the current financial crisis: if they stay outside the euro zone area they tend to become more vulnerable (speculative attacks against their currencies is a proof for this); if they get inside too quickly they risk not being able to cope with having renounced the flexibility of exchange rate and monetary policy tools. Nonetheless, a decision has to be made in view of the costs and benefits involved.

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Communicating European citizenship: a means of overcoming the civil deficit the EU faces?

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1. Introduction

The so-called democratic deficit the EU is facing, a deficit standing alongside the question of political and civil legitimacy, has occupied various scholars as well as the European institutions themselves over the last two decades. Constantly decreasing turnouts at European elections[63] as well as several negative referenda – to begin with the rejection of the Maastricht Treaty by Denmark (1992), followed by the Constitutional Treaty in the Netherlands and France (2005) and almost recently the rejection of the Lisbon Treaty in Ireland (2008) – have been taken as proof that the European project is lacking public support. It has then been argued that these deficits could be overcome by an efficient communication strategy aimed at bridging the gap between the Union and its citizens and that bringing both closer by means of such a strategy communication should be the first and necessary step in reducing the democratic deficit of the EU (Meyer 1999, Ward 2001, Anderson and McLeod 2004, Anderson and Price 2008).

In the aftermath of the fall of the Santer Commission (1999), the new Commission under Prodi started to focus more on communications and a series of policy papers on communication was produced between 2001 and 2004[64]. Based on the need for stronger collaboration between the European Parliament, the European Commission (EC) and the Council a communication strategy was elaborated and implemented. Brochures for the general public with titles such as 'It's your Europe' (2003) started to be published, putting the citizen at the heart of communicative efforts and combining those with the notion of EU citizenship.

The following section is destined to explore how communication and citizenship are linked in the EU context. The EC wants to foster a feeling of belonging and

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[63] 1979: 61,99%; 1994: 56,67%; 1999: 49,51%; 2004: 45,47% and 2009: 43%

(source: http://www.europarl.europa.eu/parliament/archive/elections2009/en/turnout_en.html, accessed 7/4/2010)

[64] See COM(2001)428 final, COM (2001)354 final, COM (2002)350 final/2, COM (2004)196 final

identification and to do so it needs to target the EU citizen and show that all EU citizens have something in common, that is EU citizenship.

2. EU citizenship

Giving the citizens special rights was an idea that started to crystallize in the early 1970s[65] but the concept of EU citizenship was formally introduced in the Treaty of Maastricht in 1992. European citizenship is bound to the nationality of a member state; eligible for Union citizenship is therefore only a citizen who already possesses the nationality of one of the member states (Art 8). Reasons for the concept of citizenship were multiple but building up trust and developing a shared identity can be identified as the main purpose (Follesdal 2001, p. 315)

It therefore tries to create a relationship between the EU as a political entity but not a state and the citizens as the possible origin of the EU's legitimacy, citizens who do not represent a *demos* in the traditional sense by attributing the EU population, that is citizens having the nationality of a member state, citizen rights. Originally anchored in the Treaty of Maastricht one can find the following catalogue of rights. Art 8 establishes EU citizenship for every citizen who has the nationality of a member state. Art 8a) establishes the right of free movement and residence. This is not an absolute right, however, but is subject to certain conditions. Art 8b) gives the EU citizen the right to vote and stand in local elections and art 8c) guarantees consular protection in a third country in which the member state of the citizen is not represented. Art 8d) then follows with the right of petition and to apply to the ombudsman.
Art 8a) can be seen as the heart of EU citizenship and was to be implemented with the Free Movement Directive 2004/38/EC and this is the article my discussion will focus on.

EU citizenship is meant to create a feeling of belonging and identification with the EU by creating a link between the union and its citizens and therefore it needs to bear applicable rights to each and every EU citizen. If this is the case a communication strategy is an appropriate way of 'spreading the word' and making people aware of the rights they have. The EC says that its objective is to establish a communication policy that aims at 'bring[ing] Europe closer to its citizens' (COM (2001)354 final, p. 4). This slogan can be split up in two components – 'Europe' and 'citizens'. The former term can be neglected at this point but the latter, on the contrary, is of particular importance for any communication strategy the EU might decide to elaborate.

3. EU citizenship linked to communications

One might think that the EC could follow a general communication policy targeted at the EU population as a whole since everyone has equal rights but this general approach would leave out minority groups having the status of EU citizens. In the case of certain South Eastern European countries (SEE), such as Slovakia, Czech Republic, Bulgaria

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[65] For an account of the history of EU citizenship see d'Oliveira (1999) and Shore (2004)

and Romania for example, a general communication strategy might not be an appropriate way to address EU citizens of these countries as members of the largest minority group in Europe, the Roma live there. This minority, also often referred to as 'gypsies', would need to be addressed in a special way and it is therefore interesting to examine in how far the EC takes this group's special needs into account when it comes to the communication of EU citizenship.

This is an important question for several reasons. First of all it poses the question whether the EC is concerned with its citizens and makes an effort to reach particular groups in a, for them, appropriate way. Second, it gives an example of the sort of cultural and regional differences that might become an obstacle when it comes to the elaboration of an effective communication strategy. Third, it shows the limits of communications and might show that communication is not a panacea to heal the EU's multiple deficits. Last but not least, it sheds some light on the question of what the EU citizen actually is and whether having the nationality of a member state is sufficient to enjoy one's EU citizen rights. If this was not the case the concept of EU citizenship risks being revealed as a hollow shell or as an exclusive concept.

The EU brochure 'An opportunity and a challenge – Migration in the European Union' (2009, p. 5) represents freedom of movement as a pleasant and easily enjoyable experience:

> Every EU citizen has the right to live and work in any other EU country. This is one of the most tangible benefits of EU membership that its citizens enjoy. For some, this has involved moving from poorer countries to wealthier ones, generally north-west Europe, to benefit from higher wages and better living conditions. But this is not a one-way street. Many migrants have chosen to move in the other direction, particularly when they retire. They swap the harsher climate of the North Sea or the Baltic for milder shores of the Mediterranean.

This harmonious image is shattered, however, when one starts considering the reasons for which minorities and often economically inactive citizens, such as the Roma; use their right of free movement and what obstacles they have to face even though they are officially entitled to enjoy their EU citizen rights.

4. The Roma and their right to free movement and residence

Not all but most of the Roma are EU citizens and therefore entitled to freely enjoy their right of free movement. However their reasons to move are different from the picture of the EU citizen enjoying their freedom of movement, such as the business man or the student as shown in brochures such as 'It's your Europe' (2003). The EU Agency for Fundamental Rights published a comparative report (2009b) in which it examined the moving patterns of Roma and the situation they faced in their destination countries. The report shows that several push and pull factors made them leave their country and try to settle in another member state of the EU. Push factors include the motivations, such as poverty, social exclusion, and racism in their countries of origins. Pull factors can be defined as 'their assumed prospects for finding work and improved living standards' (p. 6).

The dilemma the Roma EU citizens are facing is that as EU citizens they are entitled to move to another member state and are allowed to stay there for three months. According to the Free Movement Directive 2004/38/EC one is only allowed to stay longer in a country if one is not a burden to the home state's social system; that is one needs to be economically active or able to show to have sufficient resources to be economically self-efficient. The report (2009b) concludes that Roma often fail to prove 'sufficient resources' and are therefore likely to be swallowed by an administrative vicious circle since they are denied 'key civil and political, economic and social rights' (p. 9). A high number among the Roma EU citizens are not aware of these restrictions and what is more important, due to social exclusion in their countries of origin[66] they are for the most part not educated enough to find work in the formal economy. A lack of formal education is not the only obstacle. For EU citizens from Bulgaria and Romania access to the labour market of other member states is especially limited.[67] This is a limitation that is only allowed for seven years following the accession but for those seven years it does have an important impact on those who would want to access the labour market but will fail even though they are EU citizens.

Other important problems are discrimination, the prejudice and the stereotypes which the Roma are confronted with and which have an impact on the way they are treated by national authorities as well as by the population of the member states.[68] Only recently, newspapers reported how Roma were treated in Italy and Ireland because of their ethnic background and because of being perceived as a burden on the state.[69]
Another striking paradox is that whereas EU citizenship should enable the Roma to find social inclusion and to improve living standards EU citizenship disables them as their status of EU citizenship denies them access to funds that Roma not having the EU citizenship status but the third country national status can be helped with[70].

Nevertheless, the EU seems to be aware of the problem of access to the labour market and discrimination within it as several initiatives have shown. In terms of anti-discrimination the 'Community Action Program' ran from 2001-2006 and was

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[66] For a more detailed account see the Amnesty International Report

http://www.amnesty.org/en/news-and-updates/feature-stories/europes-roma-community-still-facing-massive-discrimination-20090408 (accessed 20.6.10)

[67] According to the European Agency for Fundamental Rights (2009b) France and Italy have restriction with simplifications for citizens from Bulgaria and Romania and the UK doesn't give access unless self-employed or with a 'work authorization' (p. 45)

[68] For a more detailed account on discrimination against Roma: European Agency for Fundamental Rights (2009a)

[69] See http://www.guardian.co.uk/commentisfree/2010/jan/13/roma-discrimination-eu-economy and
http://women.timesonline.co.uk/tol/life_and_style/women/the_way_we_live/article6611276.ece

[70] See ERIO (2009) Recommendations of the European Roma Information Office (ERIO) to the Spanish Presidency

followed upon by the PROGRESS (Program for Employment and Social Solidarity 2007-2013). However, the anti-discrimination measures have had little impact on the condition of the Roma so far (ERIO factsheet on the EU Anti-discrimination policies). In terms of communication on EU citizenship, the latest campaign seems to be the 'Project for Promoting European Citizenship'[71], developed in cooperation with the European Roma Information Office (ERIO) and the DG Culture and Education of the European Commission. This project targets the main countries Slovakia, Czech Republic and Bulgaria and aims to provide Roma communities with more information on national anti-discrimination legislation and on programmes on social inclusion. It is meant to inform them about their rights as EU citizens through public broadcasting's and CDs. This support will be available in different languages.

4. Conclusion

It seems efforts are being made to provide Roma with information about their rights as EU citizens. It is doubtful, however, how far this will help to improve their understanding, taking into account that the lack of formal education is a pertinent problem. In Czech Republic, for example, 75% of Romani children are in schools for children with learning disabilities regardless of their level of intelligence. The unemployment rate of Romani is very high in these countries (in Slovakia 80% of the Romani population are unemployed).[72]

Prejudices and stereotypes can't be overcome easily. Forced social inclusion by the means of housing and education brands the Roma as 'the other' and risks increasing hate and racism towards them.

In terms of communication, this analysis puts a spotlight on several obstacles the EC encounters when it comes to the elaboration of a communication strategy directed at the EU population as a whole. When targeting SEE countries, the population can't be targeted in general but particular attention must be paid to minorities which are often not integrated in their nation's society but who nevertheless have the status of an EU citizen. One has to keep in mind though that not all Roma have EU citizenship status – so it is a particular challenge to communicate to the EU Roma without creating some kind of 1st and 2nd class Roma, EU Roma and third country-nationals.

This analysis equally shows that the active EU citizen as it is often portrayed in brochures targeted at the general public is not only the student or the businessman working abroad or the family going on annual holidays with only their ID. The active EU citizen includes minorities trying to escape their country of origin to improve their living conditions in the country of destination but these minorities often fail as they are not economically active. This on the other hand turns the concept of EU citizenship into an exclusive one.

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[71] See http://erionet.org/site/basic100077.html (accessed 20.06.10)

[72] See The Guardian, 8 January 2003

As apparently 'the' EU citizen does not exist, at least not officially, communications can't be conceived in a general way but need to be adapted to the particular issues and cultural circumstances of all members of the target group. However, communications in itself is not a panacea to decrease the civil deficit. The case of the Roma shows that problems touch upon discrimination and social exclusion and are too complex to be overcome by means of a communication strategy no matter how coherent and well-conceived.

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Defense and war from a feminist perspective: the impact of women in army

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1. Theoretical framework

In this paper I would like to propose a reconstruction of the concept of defense, based on the different perception that men and women have regarding defense and the role of military women. I argue that if women were allowed to have a key role in building peace and security as gender equality dictates, then by extension, military women would also have an important role in shaping military policy, as "citizen defenders".
In support of the argument stated above, I analyze the situation of women in the military, arguing that J. Ann Tickner's critical model applies to the Romanian army. Thus, she argues that it is not enough for women to represent a certain percentage of military staff and end up by imitating the established masculine behavior model, women must also have an important role in shaping the defense concept according to their own values. I also use the arguments of Hilary Charlesworth and Mary Caprioli, who claim that it is necessary for women to overcome the status of victims or pacifists, in order to empower them in the process in achieving gender equality, both in the army and also in society in general.

In 2001 Romanian women were allowed to enter military institutions, under the pressure of the accession negotiations for NATO and the EU. This was a typical "room-service feminism" measure, meaning that gender equality policies were a result of external pressure, and not the result of an internal need identified by the decision-making political sphere. (Miroiu, 2004, 31)

Although a legal framework imposing equal opportunities for men and women in the labor market existed, starting 2005, the Defense Ministry has restricted women's access, by imposing an accession quota. The accession rights granted to the military women resemble the first wave of feminism, when women gained access to civil and political rights but not the actual power to exercise them in order to improve their status. Thus, having gained access to the military structures did not imply that women also had the capacity to produce institutional change and to promote a different defense design, in accordance with their values and interests.

Although there are many feminist perspectives regarding women's role in defining the concepts of war and defense, for the theoretical framework of the paper I focus on two of them: J. Ann Tickner's perspective, as the standpoint of feminism in International Relations, and Hilary Charlesworth's perspective, as the standpoint of empowerment feminism.

Theorists like Tickner and Charlesworth reject the association between women with peace, as opposed to anti-militarist perspectives which hold that women are more peaceful than men because of their womanly experiences (Ruddick 1989, Elshtain 1986) or because of their different socialization in the spirit of cooperation and interdependence (Caprioli, 2000). The two authors believe that this argument serves to perpetuate the myth of „protector-protégé", implicitly excluding women from the decision-making sphere regarding the defense policy. Thus, focusing on the concept of 'citizen defender'[73], Tickner argues that if both women and men are the defenders, feminist values such as cooperation and interdependence should be found in the defense conception.

In pursue of gender equality, Charlesworth criticizes the gender perspective adopted by the international documents regarding women's condition in conflict. The author deconstructs the UN approach, considering that the premises for a sustainable security cannot be based on the association of women with peace, in light of their womanly experiences. Thus, it is necessary to develop a defense approach based on gender equality favoring values, and not just provide a specific number of women in the institutions empowered to ensure peace. According to the studies conducted by Caprioli (2001) and Carreiras (2007) there is an obvious correlation between the gender equality level of a society and the measure of gender equality in military institutions.

2. Gender equality in Romania

The strategy used by the EU in order to achieve gender equality is gender mainstreaming, which is a process that introduces the gender equality perspective in all mainstream policy arenas. (Walby, 2005, 454)

Even though women represent 52 % of the Romanian population, there are only 10% women in the decision-making structures. (Tănase, Moşneag, 2006, 176) The 2004 Discrimination Barometer shows that Romanian women are constantly discriminated against in 10% of the cases. In general, women are discriminated against when trying to access resources (Stefan, 2006, 22-23). While in 2003 the gender gap concerning the rate of employment was 12.3 in favor of the men, in 2008 reached 13.2 (European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, 2010, 31). The number of women in Parliament evolved from 4% (1992), only to 9.7 % in the present. (Tănase, Moşneag, 2006, 176)

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[73] Concept proposed by Judith Stiehm in her paper „Women and Men's Wars" (1989)

Because of the socially constructed gender roles, women are seen as being kind, emphatics, emotional, dependable while men are seen as competitive, breadwinners, responsible and independent. Men are seen as "the head of the family", while women are seen as "the mistress of the household" (Stefan, 2006, 28) Even though Romanian people declare that they would vote a woman for president of the country[74] (Oprică, 2008), they consider that men are better leaders than women. (Stefan, 2006, 29)[75]

In 2001 the Romanian Ministry of Defense started a women recruitment program, however, because of the large number of women who attended military education institution from the start of the program, an admission quota for all the military institutions was imposed.

In 2003 there were 3.99% women in the army, in 2004 there were 5.18% and in 2008 the proportion decreased to only 3.16.[76] The evolution of women's proportion in military is directly correlated with the restricted access imposed to them. Thus, from 2005-2006, the quota imposed for Army Academy and Navy Academy was 25%, except for the navy engines and electrical equipments specialty where no seats for female candidates were planned. Also the quota was 30% for the Air Force Academy. The imposed quota decreased in 2010 to 9.79% in the Army Academy, 16.39% in the Air Force Academy and 10.25% in the Navy Academy[77]. In the military high schools 20% out of the total number of seats were allotted to female candidates from 2005 (Romanian National Report for 2007, 2008, 3)

The departments in which women activate in the army are: human resources, staff and logistics positions, finance, medical service, information management and technology, military law and military engineering, project and resource management, administration, public relations and military education. (Romania - National Report, 2004, 1) Notice that the women occupational field is similar to the career field for which women are trained. (Miroiu, 2004, 10). It is interesting to notice that concerning the superior officers distribution by gender there are only 2.63% women generals, 4.55% senior officers and 5.29% lieutenant colonels. (Romanian National Report for 2007, 2008, 2) The inferior number of women at the higher decision making level is the reason why women cannot determine institutional change and impose a different perspective on defense. Although the Defense Ministry argues that all positions are open to women and that women are the ones that refuse to occupy certain high level positions (Romanian National Report for 2008, 4), it has been proved that by using mechanisms such as rank restriction or ceilings, their promotion is restricted (Carreiras, 2007, 102)

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[74] According to Gallup Organization in 2003 ,73 % of the eligible voters were willing to vote a woman for president of the country if they would be proposed by the parties.

[75] As we can see from Public Opinion Barometer from 2005, 50 % of Romanian population believe that men are better leaders than women, concerning the gender segregation women agrees this affirmation in 43 %.

[76] According to the Romania National Report (2004) and the Romanian National Report for 2009.

[77] According to Ministry of Defense website.

As we can see in Romanian Army the transposed equality was based on sameness, because the existing male norm remains the standard, and women have had to imitate this model. Thus, in order to achieve real gender equality it is important to create a new standard for both women and men, and to transform the gender relations. In other words, it is not enough to add a gender perspective to the masculine standard one, the goal of gender mainstreaming should be to create new standards for everyone, "replacing the segregated institutions and standards associated with masculinity and femininity" (Walby, 2005, 455).

3. Field analysis

In this section I report on the result of a qualitative research I have conducted, using semi-structured interviews for military and civilian persons.[78] Thus, in order to highlight the existing perception among both men and women military personnel regarding the role of military women in building a defense policy, I developed a case study with 10 women and 10 men, graduates of various military educational institutions. The military respondents were young people because the goal of the research was to investigate opinion regarding women produced y military education.[79]
In order to illustrate the perception among civilians regarding the role of women in building a defense policy and the significance of gender equality in Romania I use 20 interviews with middle aged women from the research "Everyday life experience", conducted in 2009 in Hunedoara County, Romania.

All the respondents agreed that officially, women in army have the same rights as men and that they deserve to be in the army. When asking if women have the needed qualities to be a good military person, I discovered that men complain about their physical abilities and even about their psychological abilities, claiming that, even though they are welcomed in the army and that they "give grace to the system", they don't have the ability to command soldiers and that their jobs should be restricted to office tasks. Women on the other hand, highlighted men's prejudiced attitudes towards them and rejected their opinion, arguing that they do have all the abilities required for a good military person: physical, psychological abilities, ambition, professionalism and integrity. Furthermore, women claimed that in their activities they had demonstrated that "they can successfully complete the same tasks, even better than their male colleagues". Even though one of male respondents, who is in a decision making position, claimed that there is no discrimination or prejudice in his institution, he admitted that the men have misogynist attitudes towards women and that they do mock women in the beginning, but end up accepting them after a while. He also claimed that women's status was the same as the men's: „women status is man status, it is an universal one, nothing is special for women just as nothing is special for men". Men claimed that the qualities needed to work in army are intelligence, a good physical condition, ambition, toughness and good control of emotions. In light of these

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[78] The research I conducted was not national representative, beeing constructedas a case study for the measurement of the prejudices faced by the women in the army.

[79] The research was conducted in 2007, for the thesis „Equal opportunities in Romanian military institutions".

qualities, men stated that women's role must be restricted to office duties. Moreover, they believed that a professional army with dynamic personnel requires limited access for women and restricting their field of action to desk positions due to their abilities, their attention to detail and their womanly experiences.

In spite of the fact that military women did formally occupy platoon commander positions after completing a professional education, their real activity consisted in desk tasks. As the respondents said, "women are deprived of an adequate training, they face unfair sanctions concerning their activity", only because of their gender and not for the results of their work. They are also sexually harassed in many cases. Therefore, in light of all these arguments, they do not get promoted and thus they cannot improve their status, or determine institutional change. Women in Romanian military think that incremental changes, like in the bureaucratic system would determine in time a real professionalization of army.

All the respondents admitted that the pressure from NATO and EU did influence the decision of allowing women in army, "even more, when international delegations were expected, women were called to attend the meeting".

In general men believed women's career would not be affected if they had children. However women admitted that this event would probably change their perspective on war and defense and determine them to support alternative policies regarding these matters. Men support the standard defense perspective and believe that women could not change it, while women believe that a defense policy should include diplomatic measures and mechanisms for sustainable peace, using compromise and cooperation. One of the respondents agreed with the quotas measure imposed because "the army could not be composed only of women, women could not fight this type of war, they would fight a war in principle, but not a killing war". The general opinion is that women are not very welcomed in the army, this feeling being experienced all the time due to the fact that men disregard their orders and, as a woman respondent said, due to "the patriarchy and the communist view [that] still persists and [because] the system is not yet prepared to accept women and to create the proper conditions for us [them]". The military women are not hopeful in regard to the capacity of determining institutional change because they are not seen as equal, "what institutional change could I do if I cannot occupy the job for which I was trained".

Regarding the perspective of civilians about the inclusion of women in the military institutions and their role in constructing defense policies, the interviews show that civil women in general admire the women who chose a military career, but consider that this is a difficult job for them because of their family obligations. They believe that these women, being mothers, are pacifists and more inclined to diplomacy. They also believe that the main qualities for a successful career in the army are toughness and honesty, perspective that would imply that the acceptance of military women is determined by the imitation of a masculine model.
 Concerning gender equality in Romania, the general opinion is that women should be promoted more in politics and in all decision making spheres in order for correctness and equality to prevail. The respondents indentified as reasons for the low attendance rate of women in these areas the gender roles which imply that women have to deal

with all family problems and the misogynist attitudes of men who feel threatened by women and thus exclude them from the decision-making process.

4. Conclusions

According to the results of the research, women did not identify themselves as victims, they believe indeed that they posses values and abilities inclined to peace, choosing the diplomatic alternative to war. In a society where gender equality is low, where women's interests are not promoted and their participation is not stimulated, there is a lack of real power to determinate institutional changes. For this reason it is important that women be seen as real actors in achieving security, women's accession in army not being a sufficient measure for achieving gender equality and sustainable peace. In order for women to be real "defender citizens" and to promote their values and interests in the defense policy it is necessary to promote policies which will change the perception on gender roles, promote women in decision-making positions and create strong institutions to prevent and sanction the prejudice attitudes and discrimination.

A limitation of this research represents the lack of interviews with civilian men and thus, a male perspective on the inclusion of women in military institutions. This could be a future direction of the research.

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Exploring professional identity in a resistance culture: cases of Kosovo-Albanian teachers

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1. Introduction

This paper explores education in pre- and post-conflict Kosovo and presents the experiences of a small selection of Kosovo-Albanian teachers who were part of a widespread civil resistance. It argues that identities are socially constructed through interactions between the narratives of individuals and the groups in which they live. It presents teaching as a personal, emotional commitment, meaning that the identity and person of the teacher is an important part of the work they do. When dramatic new circumstances arise, existing social narratives prove inadequate and new identities are forged to meet the new challenges. This paper shows how teachers created and performed their professional identities within the resistance culture of 1990s Kosovo. It explores how teachers struggled to maintain their classrooms as peaceful, yet ethnically and culturally separate spaces for almost a decade and how they feel now in post-conflict Kosovo.

2. Theoretical & Contextual Background

Kosovo is a post-conflict, post-socialist, significantly rural, patriarchal society with a history of dependency on authoritarian leaders. Yugoslav identity, based on Tito's vision of 'brotherhood and unity', was based on legends of the partisans. Milošević ushered in an era of nationalism and a revival, for Serbs, of Orthodox religious fervour. Education has long been politicised in the region.

Under Tito's influence, the 1974 constitution granted Kosovo substantial autonomy. Albanian language education became widespread for the first time and the University of Prishtina gained its charter. Clark (2002:6) terms this a 'Kosovo Albanian cultural renaissance'.

The development of national identity is significant within the context of a political resistance to a perceived other. The national story is created through shared symbols,

the acceptance and suppression of particular 'national' memories (Hodgkin and Radstone 2003), the inclusion of those who speak 'our' language and the exclusion of those who do not, and sometimes through the acceptance of a particular religion. Teachers, as part of the educated elite in a society, are involved in creating and perpetuating this story.

Following Bourdieu (Swartz, 1997: Ch.4 &5), it could be argued the establishment of the Albanian language university represented a change of 'habitus' for Kosovo-Albanians, as the previously undifferentiated social structure began to acquire its own elite, based on education. There were expectations of social mobility and the Albanian community began to create its own cultural capital. Researching an ethnographic study in 1975, Backer believed that the traditional Albanian way of life had to be documented before it disappeared in the face of modernism (Backer, 2003). However, the lack of employment opportunities, the death of Tito, the failure of communism and the rise of Milošević, forced the Albanian communities to retreat behind their walled compounds in what has been termed a return to pre-industrialisation (ESI, 2002).

Observing conflicts around the globe, there is much to support the view that access to economic resources often underpins conflicts played out in other arenas, such as ethnicity, race or religion. Arguments about class struggle and power over resources and production are adapted to the cause of other struggles, such as the struggle for ethnic dominance. Ethnic identity became significant in the Balkan conflicts, although it could be argued that this was a cipher for underlying struggles for economic and political dominance.

1989, a year that brought change for much of central and eastern Europe, spelled disaster for Kosovo. Only months later, the Milošević-led government, which included some compliant Kosovo-Albanian communists, revoked the 1974 constitution, removing political autonomy and imposing a Serbian-focused curriculum in schools.

The wider Kosovo-Albanian population considered that the Communist Party had betrayed them. They boycotted the Serbian elections and held their own elections for the (unrecognised) government of the Republic of Kosova. Dr Ibrahim Rrugova of the LDK (Democratic League of Kosovo), an intellectual who proposed peaceful resistance, became President.

As part of the strategy to develop an alternative government, a separate education system was created. Kosovo-Albanians believed they had been presented with an unacceptable choice: accept the Serbian curriculum and lose recognition of their own culture within the education system, or leave the system. Clark (2000) points out that, '[t]he attack on Albanian-language education was central. Seen by the [Milošević] regime as the nest of nationalism, the education system was vital to the maintenance of Albanian life in Kosovo'

In most publications the parallel education system of the Kosovo-Albanian community is cited as an example of political success (Davies, 2004; Judah, 2002; Clark, 2000). While its success as a political statement cannot be denied, it is rare for anyone to look further, at the quality of the education that was being offered, or the effects it had on pupils. In 2002 Alva *et al* produced a quantitative study that focused on participation and completion rates for primary and secondary education in the 1990s. Further, with the exception of Clark (2000), who describes how some parallel activities functioned,

there is no focus on the teachers. This bears out the view that teachers are low on the list of powerful communities, even within the wider educational community (Goodson, 1992; Gitlin *et al* 1992).

My research aimed at redressing this imbalance of power by telling the stories of individual teachers who experienced the resistance. The telling of a story can be viewed as the teller's search for a personal 'truth' within their narrative, one which may not be absolute, but which is congruent with the teller's life as they see it (MacIntyre, 1981; Measor and Sikes, 1992).

Under normal circumstances, teachers are socialised within their profession. Collectively and individually, teachers negotiate with the curriculum and with the social setting of the school to create their professional identities. At the same time, teachers are deeply involved in the creation of other identities as they work with young people who are engaged in creating their own identities. Thus, the role and person of the teacher is very significant. Teachers represent their community's culture to future generations, offering both change and stability. In this respect, a teacher influences large numbers of people, not only through their technical proficiency but through their own personality or identity (Noddings, 2003). However, the teachers in this study were operating in far from normal circumstances, where it was dangerous to be recognised as a teacher, where the usual forms of professional socialisation could not take place and where the culture they represented was portrayed by those in power as inferior. My research illustrates this intertwining of teachers' individual experiences and perceptions with the national story.

Teachers' Experiences

In the examples that follow, direct quotes are drawn from recorded interviews with teachers of English in the primary and secondary sectors. Teachers are referred to by pseudonyms. Other examples are drawn from interviews or field notes.

In keeping with the low intensity nature of the early resistance period, the abnormal situation developed slowly. The wider social tensions of 1989-90 set the scene for what was to follow:

The authorities did not let the Albanians work in the factories any more.
There was declared a technical excess of workers and they had to leave.
The factories did not close, but the Albanian part lost their jobs because
there was a technical redundancy. Basically, if you wanted to stay you
would have to declare that you were Yugoslavian or Serbian – or
something like that – I can't remember exactly. And nobody wanted to
sign that document and that's why they left. (Saranda)

Early friction developed around the curriculum. The mandated Serbian focused curriculum, albeit taught in Albanian, was unacceptable to the Albanian community, which saw their cultural identity threatened. Early resistance took the form of small, but nevertheless risky, acts of disobedience:

And now what happened, not only in English but in other subjects, these
were the topics that we, I for example, didn't teach. I ignored it and I took

something else. Maybe I repeated something or I did a game or something like that. If I had more lessons I had to think what to do. I exaggerated another topic or made it wider or did more revision. I found a topic in another book from the fifth grade I thought was interesting, otherwise I just ignored those topics. (Valon)

By 1991 attitudes had hardened. With relatively few Kosovo-Albanians remaining in official positions, the authorities believed they were in a strong position to dictate the next move. Teachers were told to teach the new curriculum or leave.

So we always start five or ten days before September. We had a meeting ... we Albanians, at our school, in the teachers' room and the [Serbian] principal said, 'Please, since you do not accept the curriculum you are not allowed to continue education here.' So we left the school – we were forced. The police came. We didn't want to leave, then he called the police and they came in the corridor of the school and they said you are advised to leave. (Driton)

Ragip, working in an exclusively Albanian region, explained that the initial presentation of the ultimatum took the form of a discussion with Ministry of Education officials who arrived from Belgrade, accompanied by Kosovo-Albanian party officials. This group presented the new arrangement as a 'no lose' situation for the teachers that had been democratically approved by the local Communist Party. The meeting ended without agreement and the teachers were told they were dismissed.

The description of this meeting illustrates the political confusion at the time. The argument is not yet couched in ethnic terms, but as a struggle for political control of education and the public sector. The Communist Party claimed to represent a majority in all communities. Under pressure from Belgrade, it supported the constitutional changes and lost the confidence of the Albanian population. The LDK argued for a return to autonomy and the introduction of multi-party democracy (see Kekezi and Hida, 1990).

A key feature of the newly developing teacher identities was the attempt to shield pupils from confrontation. Secondary school pupils used rooms in primary schools until matters were resolved, which teachers assumed would be in a few weeks. They attempted to reclaim their schools without involving the pupils. Ragip explained that, having been told they could not use the facilities, they nevertheless organised teachers' meetings there, although these attempts were broken up by the police. The parallel education system was not yet systematised as no-one expected it to continue for long. However, the situation escalated:

I remember when about 50 police came, armed to the mouth and they began beating teachers and students, us... We tried many times but they didn't allow us there, so we were forced to continue the education in the houses. (Driton)

After some time, reason seemed to prevail. The authorities realised that denying primary education to children was unconstitutional and a segregated form of primary schooling was introduced, with the two main ethnic groups using their own curricula and having access to different school buildings:

The schools that have had Serbs working in them, I mean Serb pupils and
Serb teachers there, the Albanian pupils and teachers had to move, so they
couldn't use their school locals [premises] to work because the school
directors were mostly Serbian. (Vjosa)

Kosovo-Albanian primary school pupils had to move to the Albanian-only schools, causing new problems.

The pupils pushed each other, some were going out, some were coming in,
it was too crowded, all the desks and chairs were destroyed, no funding at
all and they fixed them somehow to be able to use them. (Vjosa)

Secondary education was not obligatory, so these schools had to organise themselves. Some classes continued in primary schools, adding another shift to the crowded day, others used private houses, mosques or cafes.

I found a house in a suburb of town, there were about 300 students, it was
a big house - two shifts and we worked there for 7 to 8 years. He didn't
ask for any rent or nothing, people helped us, people bought wood, parents
paid for electricity. (Driton)

Gradually, the system became organised. Certificates were created, books and registers were distributed (hidden in one case under piles of hay in a horse-drawn cart to deter inspection at road blocks). Some materials came from Tirana, while a tax on the Albanian diaspora communities helped financially. Individual families relied on remittances from relatives living abroad, on their own hard work and on help from neighbours.

When I was working as a teacher, I didn't have time to farm the land, so
my neighbours, who were good farmers, they brought me flour. They all
helped us because they knew I was working. Here and abroad, they helped
us very much indeed. (Ragip)

While war raged in Bosnia-Herzogovina, the Albanians in Kosovo survived in relative peace. In 1996, after the Dayton Accord had brought an uneasy peace to former Yugoslavia, an unsuccessful attempt was made to settle Kosovo's education dispute through an accord, which foundered due to lack of funding. Political attitudes began to harden.

The Kosovo Liberation Army (KLA) appeared as a small group in 1996. One of the teachers recalled that the dreaded Serbian fighter, Arkan and his paramilitaries, arrived in Kosovo, ready for action. Speaking with the benefit of hindsight, my key informants

felt they knew the war was coming. They continued, unsuccessfully, to try and maintain a semblance of normality in school:

I felt pity for the kids, because ... because they could hear on TV all the time that war is going to happen, they could hear their parents, most of the parents weren't careful enough, they talked about tortures and massacres and everything in front of the kids, so that I really can't forgive them. So they got quite aggressive in a way and destructive and you could notice it in the classroom from their behaviour to their friends and to the teacher and things like that. (Vjosa)

By 1998 there was open conflict in rural areas, and IDPs flooded into the towns:

So they came from the villages, no books, no notebooks, no nothing. They lived in other people's houses. And most of the families invited people ... so you saw families walking around the town having nothing with them... they just escaped from the villages. .... anybody who could help them they helped. So we invited a family together, they were two brothers and a sister with their kids and they stayed in our home until the war started in the city. (Vjosa)

The international intervention began in March 1999. Schools closed and teachers joined the exodus to the hills, to Albania and to Macedonia. All Kosovars have a story of what happened in 1999. Sitting in a café overlooking the place where people had assembled to escape; looking at the now busy street, Valon explained,

We talked before, like we are talking now, we said, a long time ago people used to go from here to Mitrovice walking, now they don't want to go 100 metres, they wait for a bus. But, when the time came people went to Albania… from here… on foot. I found out that people have an extra energy and they use it on special cases or occasions.

3. Discussion

Mertus (1999) analyses the 'myths' and 'truths' of the Kosovo conflict. She points out that there are two types of truth: facts, such as when or where an event took place, and personally produced truths, which ascribe meaning and motivations to events and actors involved in them. These latter truths combine within a community to create a perception of truth which becomes incontestable. These stories, told by teachers, form part of the myth-making of the resistance. My research, supports Clark (2000) in suggesting that the parallel education system contributed to maintaining peace rather than sparking conflict.

Emerging from resistance and conflict, Kosovo-Albanian teachers are dealing with reconstruction on many levels, including the construction and reconstruction of their

own professional identities. This paper illustrates how gradual changes in social and political realities forced individuals to create identities they might not otherwise have assumed. By choosing peaceful resistance these teachers opted to reject the historically created image of the 'warring Albanian'.

It is my view that, in order to support education in Kosovo today, it is necessary to understand the complex development of teachers' personal and professional identities. Applying this conclusion to wider contexts, I would argue that educational interventions must take account of the complexity of the socio-political context of the conflict rather than accepting simplistic, superficial interpretations.

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The Turkish Cypriot Politics in the Stranglehold of Political Clientelism: A Case of Bureaucratic Clientelism

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Introduction

Ever since the division of the island in 1974, the pro-partition parties had always been in power in the northern part of Cyprus. In 1998 general election, their combined votes had exceeded 68 percent reaching their historical apex. However, their votes declined sharply, first to 50 percent in the 2003 general election, and to 35 percent in the referendum for Annan plan in 2004. A year later, a proponent of reunification won the presidential election garnering 56 percent of the votes.

Taken together, these ballot results raise important questions, which once answered, can help us to better understand the nature of the Cyprus problem, and explain its perpetuation despite countless international efforts to solve it, earning the island the nickname 'the diplomats' graveyard'. How can we explain the nationalists' sudden and dramatic fall from grace, which also led to a shift in the Turkish Cypriot position in the inter-communal negotiations for the reunification of the island?

Given their past, uninterrupted electoral success despite their dismal record in the provision of collective goods, it is highly unlikely that this was the price paid for failing to deliver their promises.

Has the Turkish Cypriot community become less nationalist all of a sudden, then? Ultimately, the distinction between the Turkish Cypriot political parties arises from their stance towards the Cyprus conflict, and electoral competition is basically between the right wing Turkish nationalists who favor the partition / *status quo*, and left wing parties favoring the reunification of the island. Therefore, had we talked about an ideal case portrayed by 'the responsible government model', where 'above all, programmatic linkages matter for democratic accountability and responsiveness' (Kitschelt, 2000: 846) our answer should be yes.

However, as the comparative politics literature shows us, this is definitely not the case, and there are different strategies linking the electorate and the political parties together. Political clientelism, which '*represents a transaction, the direct exchange of a citizen's*

vote in return for direct payments or continuing access to employment, goods, and services,' (Kitschelt and Wilkinson, 2007:2, italics from the original) is one of the most remarkable of these strategies, and this paper aims to complement an earlier study, which explains the political sea change outlined above with the crisis of the clientelist system established by the National Unity Party (UBP) in the post-1974 period[80].

The value of this paper derives from the fact that it will be the first study to show empirically how the UBP machine turned the northern part of Cyprus, using Chubb's (1982: 256-7) term into an 'assisted society' by expanding the public sector to employ 40-45 percent of the citizens in employment by 2003 (bureaucratic clientelism to use Lyrintzis' (1984) term), and distributing other social transfers, making the economy completely dependent on the Turkish debt/aid, to maintain its power.

If we are to account for the shift from pro-partition to pro-reunification parties as an outcome of the crisis of the clientelistic system, we need to illustrate that there has been a clientelistic system in the first place. My dissertation aims to show how the UBP machine had established, and then maintained a politico-economic system based on political clientelism in the post-1974 period. Along with the particularistic distribution of Greek Cypriot properties, bureaucratic clientelism or job patronage had played a major role in the UBP strategy to stay in power. This paper aims to elaborate on the second of these instruments.

A Case of Bureaucratic Clientelism

Empirical analysis of political clientelism is a real challenge. How can we gauge the level of clientelism in a given polity? As Kitschelt points out, 'we cannot simply ask politicians to explain their favorite linkage mechanisms. Educated, sophisticated citizens such as politicians, find clientelism morally objectionable, even if they practice it' (Kitschelt 2000, 869). It would be naïve, at best, to expect them to answer this question in an honest manner. Mass surveys are also unlikely to bring up 'true confessions' as the issue is quite sensitive (Mavrogordatos, 1997: 3).

The range of goods and services provided by clientelism is quite diverse, and it is practically not possible to cover all of them. In that respect, singling out one of the instruments of clientelist parties for the purpose of intensive empirical research makes practical sense. Following the footprints of Mavrogordatos (1997: 3), who in his empirical analysis of political clientelism in Greece, limits his focus on 'employment and career opportunities', I chose public sector employment for further elaboration as it is one of the most contested issues in the northern part of Cyprus. A job in the public sector is 'not only specific' but quite similar to the case of Greece, it has become 'also the single most vital item (of patronage), as reflected in public opinion'

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[80] See Sertac Sonan (2007): From Bankruptcy to Unification and EU Membership?: The Political Economy of Post-Nationalist Transformation in Northern Cyprus. RAMSES Working Paper, 9/07, European Studies Centre, University of Oxford.

(Mavrogordatos, 1997: 3) in N. Cyprus too.[81] Bureaucratic clientelism, as Lyrintzis aptly calls this practice, can be seen as a sub-category of political clientelism at large, and can be defined as 'an organized expansion of existing posts and departments in the public sector and the addition of new ones in an attempt to secure power and maintain a party's electoral base' (Lyrintzis cited in Featherstone, 1990: 188).

In this context, the aim of the first section is to demonstrate the real size of public sector in terms of absolute figures, and then accordingly, estimate the share of public sector employment in total employment, based on published, and unpublished data available. This is to show that the public sector has been largely inflated over time. Demonstrating that this situation is an outcome of years of clientelistic recruitment is the aim of the second section[82].

Public Sector

That the public sector in the northern part of Cyprus is oversized is not a secret. Finding out exactly how oversized it is, however, takes some digging up. First, and probably the only source of information a student of northern Cyprus interested in employment statistics would be looking at are the Economic and Social Indicators booklets, which are published annually by the State Planning Organization (SPO). As can be seen in Table 1, relevant statistics seem to show a steady decline in the share of public service in total employment, and lead the researchers to conclude, like, among others, the authors of the so-called World Bank report (2006b: 14), and Noë and Watson (2005: 3) did, that the public sector's share had been declining over time, and that at the time of writing, it had provided around 20 percent of total employment.

Table 1: Sectoral Distribution of Working Population

Sectors/ Selected Years	1977	%	1985	%	1990	%
1. Agriculture	18817	42	20595	33,5	19094	26,7
2. Industry	4818	10,8	6213	10,1	8034	11,2
2.1 Quarrying	497	1,1	633	1	907	1,3
2.2 Manufacturing	3572	8	4522	7,4	5938	8,3
2.3 Electricity-Water	749	1,7	1058	1,7	1189	1,7
3. Construction	2360	5,3	4454	7,2	7451	10,4
4. Trade-Tourism	3077	6,9	5586	9,1	6942	9,7
4.1 Wholesale and Retail Trade	n/a	n/a	4519	7,3	5172	7,2
4.2 Hotels and Restaurants	n/a	n/a	1067	1,8	1770	2,5
5. Transport-Communication	1838	4,1	4004	6,6	5728	8,0

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[81] For more on the role of public employment in maintaining clientelism see especially Chubb, 1981 and 1982. For more on civil service employees in 'TRNC' from an anthropological perspective see Navaro-Yashin, 2006)

[82] In this first draft, the aim is limited to show this trend based on hard evidence as much as possible: legislations, court rulings, and criteria of recruitment in the public sector, leaving other empirical/anecdotal evidence aside for the moment.

	809	1,8	1531	2,5	1968	2,8
6. Financial Institutions	809	1,8	1531	2,5	1968	2,8
7. Business and Personal Services (incl. PEE's and Municipalities	n/a	n/a	4641	7,5	6329	8,8
8. Public Services	13076	29,1	14475	23,5	15979	22,3
TOTAL EMPLOYMENT	**44795**	**100**	**61499**	**100**	**71525**	**100,0**

Sectors/ Selected Years	1995	%	2000	%	2005	%
1. Agriculture	17383	22,7	15236	17,1	13077	12,0
2. Industry	8348	10,9	8715	9,8	9848	9,0
2.1 Quarrying	976	1,3	1105	1,2	1417	1,3
2.2 Manufacturing	6107	8,0	6234	7,0	6903	6,3
2.3 Electricity-Water	1265	1,7	1376	1,5	1528	1,4
3. Construction	9584	12,5	14104	15,8	21160	19,4
4. Trade-Tourism	8367	10,9	9630	10,8	13474	12,4
4.1 Wholesale and Retail Trade	5470	7,2	6000	6,7	8420	7,7
4.2 Hotels and Restaurants	2897	3,8	3630	4,1	5054	4,6
5. Transport-Communication	6510	8,5	8104	9,1	9952	9,1
6. Financial Institutions	2397	3,1	2397	2,7	2583	2,4
7. Business and Personal Services (incl. PEE's and Municipalities	7276	9,5	13057	14,6	18735	17,2
8. Public Services	16589	21,7	18084	20,2	20261	18,6
TOTAL EMPLOYMENT	**76454**	**100,0**	**89327**	**100,0**	**109090**	**100,0**

Source: State Planning Organization, Follow Up and Coordination Department: Economic and Social Indicators, 2003: 70-71; 2005 figures added by author based on SPO 2007: 37.

That conclusion is a huge understatement, and simply wrong. The reason is a definitional confusion. Apparently, the researchers were misled by the terminology used by the SPO on the one hand, and the absence of any alternative employment statistics, on the other. The problem is that data classified under 'Public Services' do not reflect the total number of people employed in the public sector, but rather a narrow definition of it: public administration plus 'defense, education, human health and social work activities,' all together, as defined by NACE Rev.2[83]. Consequently, the 'Public Services' figures presented under 'Sectoral Distribution of Working Population[84]' do not include, for instance, the public sector employees working in the public banks, who are covered under Financial Institutions, or the Kib-Tek (Turkish

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[83] This 'is a basic element of the international integrated system of economic classifications, which is based on classifications of the UN Statistical Commission (UNSTAT), Eurostat as well as national classifications; all of them strongly related each to the others, allowing the comparability of economic statistics produced worldwide by different institutions' (Eurostat Methodologies and working papers, Statistical classification of economic activities, in the European Community, NACE Rev. 2, 2008, p.5)

[84] See State Planning Organization, Follow Up and Coordination Department: 2003 Economic and Social Indicators, 'TRNC' state printing office, 2004, pp. 70-71.

Cypriot Electricity Authority) employees, who are covered under 'Electricity and Water', while in fact covering the employees of clinics, and schools run by the private sector. Therefore, although they may give such an impression if taken at face value, due to this definitional difference, these figures are not a reliable source of information for the public employment figures.

Diverging definition of public sector is indeed only one of the problems. Second problem derives from the method used. For a long time (1977-2005), the SPO estimated the sectoral distribution of working population based on 'value added'. Then, in an effort to adapt to the EU methods[85], the organization abandoned this, and started conducting annual household labor force surveys (HLFS), which are considered much more reliable than the previous method by the director of the Statistics Department[86]. For only two years (2004 and 2005), we have both figures available, and this renders comparison possible.

Table 2: Total employment figures

Year/Total Employment	Value Added	HLFS	Discrepancy
2004	104,873	86,914	17,959
2005	109,090	85,583	23,507

Source: Prepared by author based on State Planning Organization, Follow Up and Coordination Department: 2007 Economic and Social Indicators, pp. 36-8.

As shown in Table 2, there is a considerable discrepancy in the two sets of figures. Comparison of the results of HLFS (2006), and the 2006 census (91815, and 92088 respectively) confirms the accuracy of HLFS, which, by implication renders pre-2004 figures for both total, and public sector employment completely unreliable.

In the 2007 edition of the bulletin (the latest available), the new employment statistics were published based on HLFS results. The classification of data was also revised. However, again the share of public sector as a whole was not published. Only the number of people employed in public administration (excluding institutions, PEE's, municipalities, and temps) was made available.

This shortcoming was made up by another bulletin, which SPO has been publishing, online, since 2008: A more detailed breakdown of annual HLFS results since 2004. This publication includes a short section, revealing the number of employees working in the public sector. Therefore, rather than the Economic and Social Indicators booklets, HLFS bulletins should be the ultimate guide for the real size of public sector, and these show that it never fell below 30 percent in the period concerned, reaching 33.8 percent in 2005. The average of 5 years is 31.95 percent.

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[85] See Hanehalkı İşgücü Anketi: Açıklamalı El Kitabı, 2009,p.1.

[86] Personal communication, March 2010.

Table 3: HLFS Basic Indicators

HLFS/Year	2004	2005	2006	2007	2008
Total labor force	96592	93248	101366	99149	101104
Total employment	86914	85583	91815	89787	91223
Public Sector employment	27900	28903	29106	28289	27893
Public sector/ total employment %	32,1	33,8	31,7	31,5	30,6

Source: Prepared by author based on HLFS results, 2004-2008.

The problem is that HFLS figures are limited to the 5 sets of data covering the period between 2004 and 2008, which is beyond the scope of my dissertation (1974-2004). Nevertheless, this table makes a good analytical tool for two reasons. First, although it represents the period when UBP was no longer in power (it fell from power after the election in December 2003), it shows nothing more than a continuation of the trend, which had been started by UBP long ago. Second, it provides a benchmark for comparison for the figures obtained via estimation.

Another important source of information, which can make a good basis for estimation, is census results. There are two census results available: 1996 and 2006. According to the 2006 HLFS results, the public employment figure was estimated as 29,106. As shown in Table 4, when read along with the census results, and the number of voters, this finding unequivocally shows the importance of the public sector employees. They represent, 31.6% of the total employment, and 19.3% of the voters; for every working 3.17 people, and 6.12 citizens, there is one public sector employee. Even more strikingly, it turns out that almost 1 out of 2 'TRNC' citizens in employment, is on the payroll of the state.

Table 4: The proportion of public employment as a percentage of selected indicators

Selected Indicators	2006	Public Employment / Indicator (%)
Labor Force	102962	28,3
Total Employment	92088	31,6
'TRNC' Citizens Employed	62181	46,8
Number of Voters	150660[87]	19,3
'TRNC' citizens	178031	16,3

Source: Prepared by author based on the 2006 census; 2006 HLFS results; and data from High Electoral Council.

In the absence of published data, to extend this finding, and test its validity in a broader historical perspective, I turned to interviews with officials from the SPO, and the

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[87] Estimated by author based on the data from High Electoral Council for 2005 and 2009 elections.

Personnel Department under the Prime Minister's office. As a result, I have gathered various unpublished data, which reveals significant information regarding the public sector employment. One of the most important of these data is provided by a table presenting a detailed breakdown of public sector employees including, public administration (comprising of permanent staff, temps, and workers); institutions and PEE's; and municipalities, as well as pensioners on yearly basis covering the period 1990-2008. According to my informant[88], the SPO had formed this table by gathering data from the Ministry of Finance (based on the number of pay checks issued per month), and by calling the institutions, PEE's, and municipalities one by one. Although there are some discrepancies with the HLFS figures, the gap is not huge. Furthermore, to a certain extent this discrepancy can be accounted for by the fact that Turkish officers, medical doctors, and teachers serving in the island are covered in the HLFS, and not in the Ministry of Finance records, as they are not on the payroll of the 'TRNC' Treasury[89].

However, there is no data regarding the total employment figures. In other words, although the nominator is available, the denominator is missing. Therefore, it should be somehow estimated to render a sound assessment possible. One important exception to this opaqueness is the total employment figure from the 1996 census. Availability of this number gives us the opportunity to calculate the annual average change from 1996 to 2006 (2.98%). Assuming that the total employment figures are not something very volatile, I applied the same growth rate to the period 1990-1995. Using the same logic, I estimated the number of 'TRNC' citizens employed (1990-2006) based on the official data from 1998 and 2006 to complete the data set. The table formed following this method, provides us with an analytical tool to evaluate the public sector from various angles.

Table 5: The proportion of public employment as a percentage of selected indicators

Year	Total Employment (T.E.)	'TRNC' Citizens Employed (T.C.E)	Public Employment (P.E.)	P. E. / T.E. (%)	P.E. / T.C.E (%)
1990	57580	42860	18619	32,3	43,4
1991	59295	43871	18178	30,7	41,4
1992	61061	44907	19067	31,2	42,5
1993	62879	45966	20002	31,8	43,5
1994	64751	47051	20444	31,6	43,5
1995	66680	48161	19543	29,3	40,6

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[88] Personal Communication, December 2009.

[89] On the other hand, some of the institutions, and PEE's are not covered by the HLFS, which leads to a probable understatement. This has to be clarified by conducting more interviews.

1996	**68667**[90]	49298	19761	28,8	40,1
1997	70712	50461	20515	29,0	40,7
1998	72818	**51652**	20870	28,7	40,4
1999	74987	52864	21287	28,4	40,3
2000	77220	54104	21437	27,8	39,6
2001	79520	55373	21607	27,2	39,0
2002	81888	56673	22104	27,0	39,0
2003	84327	58002	24079	28,6	41,5
2004	86838	59363	23879	27,5	40,2
2005	89425	60756	25223	28,2	41,5
2006	**92088**	**62181**	25964	28,2	41,8

Source: Prepared by author based on unpublished data from the SPO (for the Public Employment figures 1990-2006); Results of the Household Income Distribution Survey 1998 (for the number of 'TRNC' citizens employed for 1998); Results of the Census 2006 (for the total employment figure in 2006 and the number of 'TRNC' citizens employed in 2006); Census of Population Social and Economic Characteristics of Population, December 15, 1996 (for the total employment figure in 1996).

As seen in Table 5, contrary to what other studies claimed before, there is only a very gradual decline in the proportion of public sector employment. However, it continues to expand in absolute terms adding up to the burden on the budget. When we introduce the pensioners to the equation both the burden on the budget, and this group's politcial clout become more apparent.

Table 6: Pensioners and Public Sector Employees as a proportion of voters.

Year	Public Sector (P.S.)	P.S. Pensioners	Total	Voters	Total/Voters (%)
1990	18619	7585	26204	**101306**	**25,9**
1991	18178	7889	26067	**106301**	**24,5**
1992	19067	8221	27288	107553	25,4
1993	20002	8545	28547	**108820**	**26,2**
1994	20444	8851	29295	111057	26,4
1995	19543	9825	29368	**113340**	**25,9**
1996	19761	10234	29995	115202	26,0
1997	20515	10434	30949	117095	26,4
1998	20870	10806	31676	**119019**	**26,6**
1999	21287	11035	32322	122787	26,3
2000	21437	11341	32778	**126675**	**25,9**

[90] In T.E. and T.C.E columns, figures in bold are from official statistics. The rest are estimated by author based on these official figures.

2001	21607	11744	33351	131228	25,4
2002	22104	11681	33785	135945	24,9
2003	24079	11817	35896	**140832**	**25,5**
2004	23879	11930	35809	**143639**	**24,9**
2005	25223	12120	37343	**147249**	**25,4**
2006	25964	12039	38003	150660	25,2

Source: Prepared by author based on data from the SPO (unpublished document); High Electoral Council[91].

Table 6 shows that over time, consistently every 1 out of 4 voters is either a public sector employee or used to be one. At any rate, they are on the payroll of the state. When we factor in these people's spouses and children as well, their influence grows even bigger, and makes this group probably the most decisive power in the political life.

An inevitable outcome of such an expansion of the public sector is ever-widening budget deficits. Table 7 demonstrates how destructive this policy can be on the budget figures. In only one of the 17 years covered, the local revenues could meet the total expenditure on Personnel and Transfer, the rest being covered by Turkey.

Table 7: Balance of State Revenues and Expenditures (1977 prices TL)

	Local Revenues (L.R.)	Personnel Expenditure (P.E.)	Transfer Expenditures (T.E)	P.E.+T.E./L.R (%)
1990	1760	933	823	99,8
1991	1516	993	963	129,0
1992	1547	984	876	120,2
1993	1837	1059	980	111,0
1994	2082	1170	1010	104,7
1995	1794	1168	1228	133,6
1996	1874	1120	1191	123,3
1997	2335	1206	1316	108,0
1998	2276	1.235	1492	119,8
1999	2528	1.469	1655	123,6
2000	2529	1.569	1980	140,3
2001	2091	1.098	2084	152,2
2002	2250	1.202	2930	183,6
2003	3205	1.525	2705	132,0
2004	4421	1.768	2912	105,9

[91] For total number of voters, figures in bold are real numbers extracted from the High Electoral Council's election results; the rest estimated by author based on real figures.

| 2005 | 4419 | 2.048 | 2969 | 113,5 |
| 2006 | 4473 | 2.296 | 2887 | 115,9 |

Bureaucratic Clientelism

Having a big public sector sucking the treasury dry does not necessarily mean that these jobs were distributed as part of a clientelistic deal. What really matters is the way these employees were recruited to the public sector. In this context, the method of employment can be used as an indicator to gauge to what extent this enormous size was due to patronage appointments. This is, in essence, what Mavrogordatos did in his study on Greece. He identified 'meritocracy, implying a system whereby appointments and career patterns are determined on the basis of merit alone, according to universalistic and objective criteria,' as the opposite of clientelism (Mavrogordatos, 1997: 4). Then he compared the number of employments made through party channels (clientelistic), and general competition/examination (meritocratic). Empirical evidence and similarity of conditions i.e. the methods of employment used, shows that this approach is, in principle, applicable in the case of N. Cyprus too.

Since the first multi-party elections, which was held in 1976, there has been no single election, which was not tainted by the opposition's claims (and sometimes also the coalition partners' claims against each other) about the selective and partisan use of the public resources by ruling parties, be it *inter alia* in the form of distribution of the Greek Cypriot movable/immovable properties, employment in the public sector, or granting citizenship to the foreigners (read as Turkish citizens). From the simple layman to the head of the High Electoral Council, and even to the president, everyone has had something to criticize about the irregularities in the election periods. To take a random look at the newspapers in a given election period suffices to have an idea about the extensiveness of the direct exchange of votes for a 'reasonable price'. For instance, after arguing that every party, including his, had resorted to buying votes, Serdar Denktaş[92], the leader of the Democratic Party, was quoted saying that the price of a vote could go as low as 100-200 Turkish liras in the 2009 parliament elections[93].

In its report on December 2003 Parliamentary Elections, the Norwegian Centre for Human Rights concludes that 'there is no reasonable doubt that vote buying and undue influence on voters occurred in connection with the 2003 parliamentary elections … It is not just a question of isolated cases. Such practices were widespread, at least in some segments of the population' (Hylland, 2004: 42).

While vote for cash remained to be a reality, the importance of a job in the public

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[92] See Simon Bahceli, Votes for cash claim in north, Cyprus Mail, 25 April 2009.
[93] According to Hylland, reportedly 'the price of a vote was, and had for a long time been, USD 100' (2004: 30).

sector as an instrument of political clientelism started taking precedence vis-à-vis other means, especially after the exhaustion of the Greek Cypriot properties that can be distributed. What makes a job in the public sector a real vote-winner or 'a society's greatest object of desire' as Navaro-Yashin (2006: 285) puts it, is the dismal performance of the economy at large, and difficulty of finding a decent job in the private sector, which can compete with the advantages offered by a public sector job like lax working conditions, job security, higher salaries and social rights.

Legal Framework: Civil Service Law

To understand exactly how the bureaucratic clientelism works in practice, we need to first look into the legal framework regulating the public sector. All the permanent posts available at the civil service are defined, and enumerated by the Civil Service Law (*Kamu Görevlileri Yasası*) dated 1979. Appointment to these posts requires a certain procedure, which is conducted by the Civil Service Commission. This involves passing a central proficiency/qualification examination on the 'TRNC' Constitution and the Civil Service Law, as well as other specific examinations that may be required by the particular post concerned. However, this procedure applies only to the public administration in its narrowest sense. For instance, teachers, police officers, employees of the municipalities, PEE's, and other autonomous or semi-autonomous institutions do not fall under this legislation.

Appointing employees on temporary posts, on the other hand, is at the discretion of the minister concerned provided that the Personnel Department, and the Ministry of Finance give their approval. Although this method also stipulates a call for applications in the official gazette, and examination, the process of employment is not through the Civil Service Commission[94]. A third method is to employ people in the status of so-called '03 permanent worker', a status which is originally envisaged for people with no university degree, and the fourth method is employment on contractual basis.

Table 8: Public sector employees recruited through the Civil Service Commission

Year	Tenured Civil Service Employees	Total Number of Public Employees	Tenured/Total (%)
1990	4014	18619	21,6
1995	4244	19543	21,7
2000	4526	21437	21,1
2005	4728	25223	18,7

Prepared by author based on unpublished SPO data (Total Public Employment); unpublished data from the Personnel Department (Tenured Civil Service Employees)[95].

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[94] Kamu Hizmeti Yasası, 7/1979, Kısım 1, Madde 6 (2).

[95] Personal Communication, December 2008.

Given this legal framework, Table 8 shows that only some 20 percent of the public sector employees have gone through the "nominally meritocratic" procedure outlined by the law before taking a post in the public service. In other words, provided that this "nominally meritocratic" procedure of employment was followed strictly, we could say that 80 percent of recruitments done were open to political abuse, to say the least.

My interviews with the employees of the Personnel Department revealed that practice could not be more different than the laws envisaged. I was told that as far as the legal framework was concerned 'we are probably better than any other country in terms of meritocracy; the problem is in the enforcement[96]'. Regarding the examinations of the Civil Service Commission, common understanding is that most of the time they were token examinations, where in oral exams, the questions did not go further than 'who is your father?' and in the written examinations, questions were often leaked to the clients in advance. Overall common belief is, as one of Navaro-Yashin's informants puts it '(t)here is no such thing as merit in the civil service. … No one is brought to a position in the civil service because he has merits. He is promoted because he has *torpil*[97], through relations between partners and friends [*es-dost iliskisi*]' (2006: 284).

Even though the Civil Service Commission's involvement does not really ensure meritocracy in the process, apparently the pre-requisite of success in the central proficiency/qualification exam is acting as a deterrent for the large-scale employment of this method. As seen in Table 7, the absolute number grew very gradually, although more than half of the positions have been vacant[98]. Most favoured three methods, it turns out, are appointments in temporary, '03 permanent worker,' and contractual positions. The latter two methods are preferred, as they do not require any examination procedure at all. However, contractual employment is used less frequently, as it has a minimum master degree requirement.

Although it does require some form of examination, absence of any general/central exam requirement for appointments in the temporary positions, seemingly, renders skipping the examination process altogether possible. Though it is against the law, this is basically considered as a loophole in the law, and used by the politicians to employ their clients without any examination. Referring to the way temporary positions were doled out in the run up to 2003 parliament elections, one of my informants said, ' I could even have had my late grandmother employed[99]'.

Beyond its relative simplicity, this method has another advantage for the patron: 'people hired under such circumstances can have a concrete interest in the government being re-elected, since they may have reasons to fear that a new government will terminate their employment' (Hylland, 2004: 41). This situation makes them more likely to honor their part of the transaction, on the one hand, and to work actively in

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[96] Personal Communication, April 2010.

[97] In this context *torpil* means a patron.

[98] For 2005, the number of vacant positions stood at 4552 (Personnel Department).

[99] Personal Communication, December 2008.

the campaign process, on the other. As it does not provide lifetime tenure, it can be terminated at the discretion of the patron even after the re-election of the government. Therefore, at any rate the transaction does not come to an end, and the client's dependence on the party continues.

However, in the long run, with the increasing number of people on the temporary posts, the party finds itself in an unsustainable position in the face of growing pressure for permanent positions. There are three cases in point, when the government eventually bowed to these demands: 1984; 1997; 2000. Elaboration of the legislations designed to tenure these employees gives us a rough idea about how frequently this method had been used.

The Law Tenuring the Temporary Personnel (*Geçici Personelin Kadrolanması Yasası*) (22/1984) dated 1984, appointed in total 3475 temps to permanent posts both as civil servants, and workers.

The proposed law *Geçici Personelin Kadrolanması Yasası* (3/1997) dated 1997 , on the other hand, was supposed to appoint 1105 temps (who were employed between 1985 and 1996) to permanent posts. 3/97 has never come into force as the Constitutional Court subsequently rejected it upon the president's referral of the law to the Court. The verdict suggests that the proposed-law was a clear infringement of the constitution (Article 8), as it violated the equal opportunity principle, by excluding the rest of the citizens not holding office (as temps), even though they may have had better qualifications than the office-holders. Two of the judges opposed this decision. They justified their opposition by stating that the proposed law was a middle-way solution, which was accepted by both the parliamentary opposition, and the trade unions. Among other things, they argued that the law *per se* did not violate the constitution but rather fixed an earlier violation, which had been committed by employing these people in the first place. They argued that contrary to the Article 6 (2) of the relevant law - which says the employment is completely temporary, and could not last more than one budgetary period - both the ones who employed the temps, and the temps themselves had never intended to keep these positions temporarily. But rather both sides saw this as a first step to the public sector, which would eventually, somehow be turned into permanent positions. It is interesting to note that there was no reference made to the earlier law (22/1984), although they explicilty expressed their concern regarding the probability that this legislation could form a loophole, which could be abused by the party in power in the future too especially in the election periods.

What law 97/3 tried and failed to do was later achieved by the law dated 2000 (19/2000), which eventually tenured 1166 temps. Although, this was the last time a law was made to appoint the temps to the permanent positions, temporary employment did not come to an end, and continued even after the Republican Turkish Party (CTP) took over the government in 2004. Ankara, which has been plugging the ever-widening budget gap every year felt the urge to intervene at some point, and with a protocol between the government of Turkey, and N. Cyprus dated June 2006[100], tried to force

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[100] Economical, and Financial Cooperation Protocol between the Government of the Republic of Turkey, and the Government of the Turkish Republic of Northern Cyprus, Nicosia, 20.07.2006.

the Turkish Cypriot government to complete '(t)he legal regulation requiring objective examination system for temporary workers recruited for public services, other than the civil servants, and the draw system for the seasonal employees' within a year[101].

Beyond these empirical evidences, which show the widespread use of patronage by the UBP goverments ın general, there are two other cases, which undeniably show the abuse of employment in the public sector in the run up to elections. These are the general elections of 1993, and 2003. In both cases, the UBP lost power rendering investigations on the irregularities during the election periods possible.

In the case of 1993 elections, the Council of Ministers authorized the Ministers of Finance, and Economy or the directors of these Ministries along with the director of the Personnel Department to employ temps to 'various ministries, and directorates' just few days before the elections[102]. Accordingly, many potential voters – hundreds of them according tho the local daily *Kibris*[103] - were employed in the public sector. Both the Auditor General, and Attorney General declared these employments illegal[104] right after the elections, and eventually they were annulled by the incoming Council of Ministers[105].

In the case of 2003 elections, the UBP government employed 1660 people in the run up to the elections violating the Electoral Law once again. The incoming Council of Ministers annulled the employment of these people, who had been admitted to 'the public service illegally'[106].

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[101] With this protocol the Turkish Cypriot government undertook 'to press ahead with the 'Public Reform', 'Social Security Reform', 'Local Administrations Reform' and 'PEE (Public Economic Enterprise Reform)' to secure Turkish aid.

[102] See *Karar Numarasi: E – 1520 – 93: Muhtelif Dairelere Geçici Statüde Gündelikçi Olarak Istihdam Yapılması*.

[103] See Kıbrıs: Geçici İstihdam Yasal Değil, 14 December 1993.

[104] *Ibid.*; See Kıbrıs: Geçici İstihdam Kargaşaya Dönüştü, 15 December 1993; Kıbrıs: Geçiciler Durduruldu, 18 December 2003.

[105] See Kıbrıs: Geçiciler Durduruldu, 18 December 1993.

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Slav Muslim Identity in the Balkan: The case of *Makedonci muslimani* in Dolna Reka

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1. Introduction - Defining the Issue of Population Naming

As a basic and the most essential issue that I have been facing is actually deriving from the title of this research itself. Naming of the population is the core of its collective identity. Therefore I have used national phrase "*Makedonci muslimani*" that appears as widely recognized nowadays. This name has been promoted much more within the 70-ties in the previous century, used as a construction that in this community was being incorporated within the Macedonian nation-state. The names "*Macedonians of Islamic religion*" or even "*Islamized Macedonians*" that surely match each-other accordingly, seems as inappropriate because it is being associated with the process of Islamizing and the alteration of one's Christian religion. As it is insisted, through the science to emphasize the process of Islamizing on the territories inhabited with population of this category, it inevitably comes to the phase of the fear that in future all those people would become "*gentiles again*" (Christianized) increases. This fear coming from certain political factors is even used in some conditions of political mobilization. Alternatively, it is well-known that the Christianity as a religion is a predecessor of the gentile therefore it would completely be inappropriate to name the majority of the population of R. of Macedonia as "*Christianized Macedonians*". The name "*Torbesh*" that refers to this group is widely spread especially within the other categories of the population in R. of Macedonia; but it appears as impossible to be used as of its pejorative connotation. Yet some researches use this name even to the point of attaching it to a separate ethnicity (Palirusheva, 1965)[1]. The usage of the term "*Slav-speaking Muslims*" does not correspond because of its wider meaning. This term refers to the whole territory of the Balkan Peninsula. The groups that are a subject of this research are actually the ones settled on the territory of Macedonia and bear the distinction as a Pomak's group of Muslims in Bulgaria and the "*Slav-speaking*" Muslims, or Bosnjaks in Bosnia and Herzegovina, Montenegro and the area of Sandzak in Serbia.

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[1] In the last decade there is a process where the "*Torbesh*""categorial atribute is openly promoted as selfidentificational group category used for political mobilisation toward "The party for European future", and with clear thendency of promotion of new born "*Torbesh*" ethnicity.

Lately among the outer anthropologists "*Macedonian-speaking Muslims*" is quite frequently used, which seems as the best depicting of the naming of such community but subsequently offers a re-dimensioning of one's religion declaring regarding the ethnical and national identity. The usage of the terms "Serbs of Muslim religion" and "Bulgarian Mohamedanians" is not compatible with the nowadays historical context and has been used within the past mainly of political aims and in periods when on this territory other nations-states were promoted. Seemingly to that, particularly within the recent population census using the example of Bosnia and Herzegovina, the national identification is equalized with the religious identification (Muslims is equal as "*Moslems*" as well as the nowadays well-known phrase in R. of Macedonia "*Bosniaks*"). The very last term is not compatible because *Macedonian Muslims* linguistically and culturally-wise differ from the Muslims that originate from Bosnia and Herzegovina.

All of the afore-mentioned determinations are associated with population that according to religion is Islamic but according to the mother tongue is determined as "*Slav*", in this case within the historical context is Macedonian. Hence, I would come back to the term "*Makedonci muslimani*" that, repeating myself, is not ideal especially in the cases when part of this population is nationally declared as *Turks, Muslims* or *Albanians*, thus constantly reconstructing the visions of their past all the time. The national nomination is a sovereign right of each individual but in the wider scientific context there is a need to establish an appropriate universal categorization under with the most appropriate category of population would be united.

2. Collective Identity of *Makedonci muslimani*

The Ottoman state in the late 19th century was a non–national Empire, with medieval characteristics, where the bureaucracy seemed to be the only institution that linked, but not integrated many different segments of the population. It is known that the Ottoman Realm did not create the integrated society. Thus the combat for national liberation and creating national countries is not only an entire and radical breakage with the past but a negation of that same past. All of these have made the opportunity to establish the nations to be done in two basic principles such as by the language and the religion (Todorova, 2001: 240, 241).

At the end of 19th and the beginning of the 20th century, Southeastern Europe did not appear as region denoted with nations-states symbolized with the Orthodoxy. Therefore the musllim Millett regardless of the different ethnical and language distinction of the groups remained as a part of an undifferentiated discourse of The Otherness. The Mosque was presenting combat against the national awareness of the Muslim people, striving for the universality of the religion as an alone carrier of the collective organizing of the believers. Opposite of that, the Church is the barrier of the national awakening and rebirth, standing as an institutional foundation of the Balkan nations-states (Limanoski, 1989: 96).

Collective group identity, at the category nowadays best known as Macedonian Muslims begins its establishing together with the process of Islamizing and separating from the main Christian community. On religions bases consequently, the relationship

towards the "Other" was built including the one with people from the same linguistic origine.

Creating nations according the language, with an exception of the Albanians, has been obstructed from the religious aspect maintaining the old separation from the Ottoman Empire. Therefore it was impossible not only to integrate the groups that according the ethnical and linguistic bases differs from one another from the dominant nations within the national country, but it was impossible as well for those groups holding identical language or ethnical bases: *Pomaks* from Bulgaria, *Slav-Muslims* from Bosnia and Herzegovina, "*Torbesh*" from Macedonia etc. The Christian nations on the Balkans have started to understand each other with the language of nationalism, while their attitude towards the Muslims remained in the domain of the undifferentiated discourse among the religious communities. Conversely on that, the inability of the Muslims to adapt to the national code, practically excluded them from the process of national integrating, so they kept the fluid awareness that for long time after was an image for a Millett-mentality of this area and therefore to the Ottoman heritage (Todorova, 2001: 260,261).

The new bordering after 1912 has become the basic criterion for defining the collective identities. National identity was promoted as a primary factor in the group identification, rivaling in the same religious collective categorizing manner as known afore (Karakasidou, 2002: 20, 21).

Within the period of few decades after the end of World War II the already gotten aspect regarding the national origin for *Makedinci muslimani* as part of the *Turkish* or *Albanian nation*, is still predominated (Todorovski, 2001: 297). Under the new communistic power that was based on the ideology and secularism, the power of the Islamic community started to weaken. All of these are depicted through the educational process, as well as in the behavior of the population at that time when between the 50-ties and the 60-ties of the 20th century migrating towards Turkey was on. The combination of the Macedonian Christian aspect to the one that gives content to the *Macedonian-hood* as well as the relation between the Christians and the Muslims is excluding the category "*Makedonci muslimani*". As for the *Macedonians,* the inherent conflict between the Orthodoxy as a central element of their identity and Islam, is actually excluding the *Makedonci muslimani* a priori from the Macedonian community in a manner that they have imagined.

As for Fraenkel, it is conceptually unable to adjust the concept of Macedonian to the one of a Muslim, not only regarding the definition categories that refer to themselves in the world but seemingly regarding the continuous national culture and political practice that was traced by Macedonian Government ever since the end of World War II during the so-called Yugoslavian period, where after 1991 the independency of R. of Macedonia, was ongoing and implemented (Fraenkel, 1995: 156,157). The implications of *Makedonci muslimani* community were significant not only within the inner-Muslim behavior but towards the Macedonians as well. The ability of the people to decide "*who are they*", was caused by the politicians which claim the knowing of "*who they really are",* as a political decision and not cultural or societal criterion (Freankel, 1995: 161). Odzeski uses the pejorative term "*Torbesh*" for *Makedonci*

muslimani as a frustration that seems equally directed as: firstly, towards the categorizers in the image of Macedonian Christians that do not accept this religiously different community as a concurrent part of Macedonian people or nation and secondly, towards the self-identifying character of *Makedonci muslimani* that "still do not know themselves good enough and they recognize themselves the best as "*Torbesh*" (Odzeski, 2005: 44, 45).

The national non-acceptance by the Macedonian Christian majority, almost always follows with construction of the historical view where changing of religion is taken as renegade and non-loyal to which *Makedonci muslimani* perceive as a projection of the sense of collective historical guilt that their ancestors have transferred to them on and on. All of the above-mentioned is causing confusion when it comes to collective or especially the national identity. The mainstream of Macedonian nation refuses *Makedonci muslimani* as part of the unique nation; Turks, even-though that *Makedonci muslimani* are coquetting as real Turks, do not consider them as their own people, just as the Albanians – considering them as foreigners, not belonging to their group (Limanoski, 1989: 104). Marginalizing of *Makedonci muslimani* by the Albanian and Turkish groups is a significant factor to increase their feeling for Macedonian linguistic nationalism (Perry, 2001: 241,242).

3. Two cases of Identity Manifesting in Dolna Reka

This part of the research presents the analysis of the results gained from the research conducted in the region of Dolna Reka (Lower River) in north western part of R. of Macedonia. The methodology of the research includes empirical research of the processed and statistical data as well as conduct of semi-structured and unstructured interviews by which it was strived to detect the group collective identity of the population that belongs to the group of Makedonci muslimani, all that through the segments of coexistence and migrations.

A. Ethical Groups and Their Bordering

Barth (1997) primarily appoints to the human behavior in terms of wider existing group but yet puts the accent over the cultural level. Tracking of the ethical groups cannot be drawn to the level of only being cultural groups, but before all, they should be considered as types of organizations that are based on the awarding and self-ascribing of individuals i.e. of certain ethical categories. The phenomenon and the existence of the ethnical groups are being mattered in terms of units that might identify themselves through maintaining their bordering. Barth, seemingly, cannot be considered into one theoretical frequency, i.e. he deals with an interaction as the same time (referring to Goffman), but on the other hand he places the individual action on the first place (Putinja, and Zoslin Stref-Fenar, 1997. Tehory of Ethinicity, Belgrade, Library XX century: 125-127).

Even though that today the thesis for martial maintaining of culture of one tribe or people because of their neighbors is being rejected, yet the scientific attitude, according to which the geographical and societal isolation are providing the cultural diversity, is still predominated. In other words, the existence of ethical categories is not based on dynamism, contacts and information, but on the process of including and

excluding in the society, that will maintain those categories despite of the individual experiences. The explicit fluctuation in the identities at the Makedonci muslimani is a trait to everyone along Dolna Reka region. Analogically to that condition, we come across a situation of the *Pomak* identity in the vicinities of Rodopi Mountains in Bulgaria.[2] The fluctuations differ depending of the inhabited areas. While in the village of Skudrinje people traditionally, with an exception of 1981, declare as Turks, in Zirovnica there is a fluctuation regarding the Macedonian, Turkish and Muslim nomination. Therefore, the determining of the geography and the national declaration goes in direction to a conceptualizing of bordering between neighboring vicinities. *Makedonci muslimani* from the regions of village Rostuse and village Velebrdo which live together with the orthodox Macedonians, use the Turkish identification based on the religion in order to withdraw an ethnical bordering with their Macedonian neighbors. But those who live in the eastern part of Dolna Reka, in village Zerovnica, who all together live with Albanians, declare themselves as Macedonians, not because of the nature of their Macedonian national awareness but moreover to separate themselves from the Albanian population that as a competitive group might jeopardize the geographical space and their existing.

B. Selective comprehension of the past

On the day of 30th September, 1943, on the Christian religious holiday called Krstovden and the very first day of the Muslim religious holiday Bayram, there was an incident in v. of Rostuse. After the clashes between the Partizans and the Balists, on 13th of October the Ballists that intruded the village, mined and exploded the church that was situated in the center of Rostise by the gang od Dzemo, which together with Balists of Vrbjani previously burned every church book (Odzeski, 2005:156-162).

This very recent event of ruining the church in Rostuse would cause many contra-versions and would create conditions of tension between the Christian and Muslim community in the village, with a potential to infringe the traditional harmonized confessional relations. By Todorovski, the infringing of the church in Rostuse, was performed by the local inhabitants "*Islamized Macedonians*" (Todorovski, 2001:170). This aspect was supported by a large number of Christian contemporaries of this event, which emphasize that many of them were forced by their fellow–peasants to ruin the church. As of Nijazi Limanovski the church in Rostuse was ruined by the Ballists from the above-mentioned village Vrbjani. As for Todorovski this approach is an image of the Muslims that refuse to talk about the event, therefore insisting to minimize it in order not to cause any other tensions (Idibem, 170).

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[2] Pomaks that appear in the regions of Western Rodopi Mountains which live together with the orthodox "Bulgarians" use the Turkish identification, based on religion in order to draw an ethnical bordering with their Bulgarian Christian neighbors. But in the eastern part of Rodopi, where they live in surrounding with the Turks, declare themselves as Bulgarians, not only from the sense of Bulgarian national awareness but moreover to separate themselves from the Turkish population. There is a huge number that are naming themselves as Pomaks, Achrians or simply Muslims. In the period of the 1990s there are tendencies of self-defining as Pomaks. The third tendency is refusing the Bulgarian and Turkish identity and creating a separate Pomak ethnical awareness (Brunbauer, 2002: 90-104).

However, the different presenting of the history is not resulting from 1943 but it is a represent of the core differenced that were created with the process of Islamizing of the Mijak group, meaning the difference regarding the confessional belonging. The church "*St. Bogorodica*" that was situated in the center of the Rostuse was turned into mosque that served until 1912[3], later again to be turned into church. The church was rebuilt in 1936 and in 1943 was ruined. Today the place is used as a village square and a playground for children in the primary school. There is a separation in the perception of the historical significance of the place between the Muslims and the Christians. One of them says "*in front of the mosque*" and the other say "in *front of the church*" or "in *the center of the village*" (Limanoski, 1993:241).

As during the construction of the historical image of this place, both confessions make up a selective impression. The Christians say that on this place there was a Christian religious facility even before the Ottoman arrival, taking the liberty to consider this as a holy place; at the same time the Muslims insist that before the building of the church between the two World Wars, there was a mosque. On the other hand, while the Christians keep themselves silent about the ruining of the mosque, in 1912, the Muslims attempt to create a condition of amnesia regarding the ruining of the church in 1943.

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[3] As for the mosque in the center of the village Fazlo Fajzuli from Rostuse born in 1890 stated the following: *When I arrived in the village this mosque was there ... In 1912 the mosque was ruined: Kole from Velebrdo, Serafil from Lajsovci, Damce and Gavril from Bituse. Me and my fellows Torbesh did not protested. In 1918 we started building the today's mosque* (Limanoski, 1993: 291,292).

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The Populist Radical Right in Post Communist South Eastern Europe: The Case of Bulgaria.

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1. Introduction

The European political stage is dominated by parties with a long tradition, as after World War II, only two new parties were created – the greens and the populist radical right. Out of these two, only the latter one gained support, not only in Western Europe but also in the former communist countries of Eastern Europe – this peculiar fact will be discussed further in the article. Is the populist radical right really experiencing such tremendous growth? Mudde states that "extreme right is not blowing for a general attack on the parliaments of Europe. In fact, it is still a relatively marginal electoral force in the vast majority of European countries", of course one can notice some exceptions such as, Slovakia or Austria, where the radical populist right parties were able to create their own government and are one of the major political actors (Mudde 2007: 1-2).

This paper aims to assess the populist radical right parties in Bulgaria and their activeness in the political arena which arose after 2001. The main research question of this paper is threefold: which are the populist radical right parties in Bulgaria, what are their major areas of interest and what are the characteristic features which lead to their success? First of all, I will focus on the theoretical framework and definition of the populist radical right, then I will map out peculiar features of the Bulgarian political system and identify the populist radical right party actors. Finally, conclusions will be presented concerning the rise of the populist radical right's popularity among Bulgarian society.

2. Radical Right Populism – defining the concept

Defining the concept of radical right populism is not an easy task – populism itself is a fragile concept and may appear in every party on the political scene, irrespective of ideological affiliation. As many scholars have stressed, populists usurp law to represent "ordinary" people (citizens) and their political strategy will always contrast "people" versus "elites"   (Schelder 1997, Keman and Krouvel, 2005). Cas Mudde defines populism as 'an ideology that considers society to be ultimately separated into two homogeneous and antagonistic groups, 'the pure people' versus 'the corrupted elite', and which argues that politics should be an expression of the *volonte generale* (general will) of the people' (Mudde 2004: 543). In the populist democracy 'nothing is more

import ant that "general will" of the people, not even the human rights or constitutional guarantees' (Mudde 2007: 23). Other researchers have stressed that populism is usually used by political leaders who claim to be able to resolve all the major problems (Schmitter 2006) or as a symbolic performance or a political device (Canovan 1999, Taggart 2000). Andreev and other researchers have also noted, that the contemporary rise of populism in both Eastern and Western Europe is primarily seen as a crisis of representative democracy and the end of liberal consensus (Krastev 2007), as populism operates at the expense of representative institutions – legislatures, parties and civil society (Andreev 2009:1). One should remember that populism is a dynamic phenomenon often accompanied by other ideological concepts, for example the radical or extreme right.

Discussing the radical right is crucial to distinguish between the terms of radicalism and extremism, as they are often misunderstood or misleading in public discourse. The main feature of extremism is its antidemocratic character. Radicalism, on the other hand, stands between democracy and extremism but still belongs to the constitutional system. Radical right parties are negating plural democracy and the right protection but at the same time they operate within the democratic system accepting it's rules (Smrčková 2009: 49). Radical right-wing parties are anti-modern, anti-western, anti-European and in the same time they fight against individual values, anything foreign, and against immigrants (Griffin 1999, Mudde 2007). In this paper I will focus on the populist radical right parties, which means that I will search for them among democratic parties. As in other fragile concepts, it is much easier to define the radical right through negation and a definition of what it is not. The major enemies of the populist radical right will be discussed in the next paragraph.

3. Mapping the populist radical right in Bulgaria

Bulgaria, together with Romania has been the latest entry into the European Union. Although the communist regime broke down like in other countries of the region, twenty years later, the transition and democratization of the country is still in process. The Bulgarian way to democracy and a market economy was much rougher than, for example, the Central European countries. A majority of institutions, especially those created after joining the EU in 2007, are still weak and weakly rooted in society. The most significant problem is corruption, criticized by both Bulgarian society and the European institutions[4]. Interestingly, as Andreev (2009) noticed, in spite of the relatively low political legitimacy of the Bulgarian ruling elites, no significant popular mobilization of society has been observed, however, a large number of populist parties emerged on the political scene to give "a voice" to those disappointed by current political masses (p. 1-2).

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[4]   Series of negative reports and actions including blocking the EU funds were undertaken by European Commission in 2008 and 2009.

It is also important to remember the issues of ethnic and religious minorities – Bulgaria has the largest Muslim population in the European Union[5], as well as a large number of Roma minority which reflects on the populist slogans.

As the length of the paper is limited in the next paragraphs, the "first wave" of populist rhetoric will be mentioned and afterwards the current populist radical right parties in Bulgaria will be briefly discussed.

The turning point for the Bulgarian political system was the return[6] of the former Tsar Simeon Saxe-Coburg-Gotha in spring 2001, and quickly launched a political movement called Movement Simeon the Second (NDSV) which gained an almost absolute majority in the Parliament after the elections in June 2001 (Spirova 2003). It is important to notice that we may speak about populism in Bulgarian politics just from the time of the NDSV's creation, as before 2001, this trend was not so visible or clear within the Bulgarian political scene. Simeon's movement reshaped itself into a party, and in June 2007, changed its name to The National Movement for Stability and Progress. After gaining more than 42% of votes in the Parliamentary elections, Simeon II formulated a government in coalition with the party of the Turkish minority Movement of Rights and Freedoms (DPS) and became the first of royal blood in Europe to regain power according to democratic procedures. Interestingly, until Simeon II came back onto the political scene, the Bulgarian party system followed a classical bi-polar model, with a post communist left (Bulgarian Socialist Party- BSP), and an anti-communist centre-right (The Union of Democratic Forces – SDS, then after 1998 Alliance of Democratic Forces – ODS). For the first time after 2001 the structure of the political competition changed, opposing both traditional parties (BSP and SDS) to the newcomer NDSV (Cholova 2010: 12). Many scholars and publicists investigated the phenomenon of NDSV's rapid popularity, stressing the charisma of Tsar Simeon II and his European background, and their overall disappointment with the political elite among Bulgarian society (Smilov 2008, Andreev 2008, Cholova 2010).

4. The main populist radical right actors

After 2001, a "populist wave" was rapidly cresting (Smilov 2008) – in 2005, shortly before the general elections the *Nacjonalen Sojuz* ATAKA party was created by Volen Siderov[7]. Shortly after its creation, the party gained 21 seats out of 240 in the National Assembly. ATAKA developed a radical right political discourse, not only against the establishment, but also against the minorities, utilizing nationalistic rhetoric in the defense of national interests (Cholova 2010:16). The party mobilized its supporters while going on the streets and organizing public meetings, manifestations and protests

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[5] Ethnic Turks make 9,4 % but more than 12% of Bulgaria population are Muslims and over 2% of population are Roma [http://www.culturalpolicies.net/web/bulgaria.php?aid=421]

[6] Simeon is a heir of Bulgarian throne, expelled from the Bulgaria in 1946 by a communistic regime.

[7] Siderov was first a chief editor of Democratia, the semi-official newspaper of the right-wing anticommunist union SDS in the early 1990s. Afterwards, he became famous for his radical and hostile attitude vis-à-vis the Turkish and Roma minorities in Bulgaria (Chodova 2010: 15). Siderov was also a frequent guest in the Skat television which supported ATAKA.

all around Bulgaria. ATAKA entered the European Parliament in 2007, gaining 3 seats and together with other European populist parties such as; Austrian Freedom Party and French National Front, formed the Identity, Tradition and Sovereignty (ITS) group in the European Parliament. Up until 2009, ATAKA was an outsider in the Bulgarian political scene, criticized both by other parties and the media for its radical xenophobic attitudes. In 2008, Siderov declared 'I want a new monolith Bulgaria, I want an end to the theft, I want a new policy on incomes and a revision of all the privatization deals and I want a stop to the construction of mosques, even in areas where Muslims live' (Siderov cited in Kostadinov 2008). ATAKA declares major enemies of the Bulgarian nation and state to be Romas and Turks, who are accused of causing the unhealthy economic situation of Bulgaria, moreover ATAKA labels the DPF party as an anti-systemic ethnic party, and calls for its prohibition (Smrčková 2009: 55).

The political program called "20 Principles of ATAKA Political Party" include an anti NATO declaration in point 13: 'Leaving NATO. Abstention from taking part in military unions. Total neutrality. No foreign military bases on Bulgarian territory', and ends with a demand: 'Let's bring Bulgaria back to Bulgarians!' Siderov called for the removal of the Turkish-language news broadcasts on Bulgarian state television, which was originally a result of Bulgaria's ratification of the European human rights conventions (DeDominicis et al 2009: 5). ATAKA won 2 seats in the 2009 European Parliament elections and zasiliła szeregi Non-Attached Members of the EP. In the 2009 elections to the Bulgarian Parliament, ATAKA gained 9.5 % of the votes (21 seats) and decided to support the government established by Boyko Borissov and his party GERB.

Party Citizens for the European development of Bulgaria (GERB[8]) was launched by Boyko Borissov, the mayor of Sofia and former Secretary General of the Ministry of Interior in 2006. He gained popularity while being a mayor of the capital Sofia, declaring efforts to fight organized crime. Thanks to Borissov's charisma and populist anti elites and anti mafia rhetoric in 2007, the party achieved a good score, (21% of votes) in European and local elections, and finally won the 2009 general elections, gaining 116 seats out of 240 and allowing it to form their own government, although without a majority in Parliament (but supported by ATAKA). GERB also won in the 2009 elections to the European Parliament, gaining 5 seats (more than 24% of votes) and joined the European People's Party in the EP. As Cholova stressed, Borissov, while being a mayor of Sofia 'developed a classical populist rhetoric, criticizing the governing parties for the lack of efficiency and bad management', he referred to the other parties as "them" and emphasized that his priorities are not speeches but "actions" (Cholova 2010: 14). DeDominicis et al. state that Borissov's charisma "stems partly from the perception that he, as a former police official, knows and understands the world of official corruption and has both the will and the skill to fight it" (DeDominicis et al 2009: 30-31). Nowadays, GERB is not as radical in its rhetoric as ATAKA and declares itself to be a moderate and pro-European party, with the main aim of fighting corruption and improving the quality of life of the average Bulgarian. Nonetheless, some xenophobic attitudes can easily be found in the speeches of GERB's politicians. With a visit to the USA, Borissov referred to a huge number of

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[8] Being acronim GERB also means heraldic sign or coat of arms in Bulgarian

Bulgarian immigrants and stated that Bulgaria was left with a bad 'human material' consisting of 'one million Roma, 700 000 Turks, 2,5 million retirees'[9].

GERB being a right-wing conservative party, but declaring its Pro-Europeaness is constantly adapting some of the ATAKA's postulates which results in growing support for this party, and takes over part of ATAKA's protest votes as well.

As mentioned above, it is not easy to distinguish a particular catalogue of populist radical right features, but according to Mudde, we can construct the list of the major enemies of the populist radical right. The 'key internal enemy' is the elite, a 'broad and indeterminate amalgam of political, economic, and cultural actors. The national elite is criticized in both nativist and populist terms, i.e. as traitors to the nation and corruptors of the people' (Mudde 2007: 65). But discussing elites in the former communist countries is much more difficult than in the Western democracies. As Tismaneanu states, 'in Eastern Europe the point of historical reference is the former communist regime: the new elites are accused of being 'the old elites with new masks' (Tismaneanu 1996: 527). This is why so many politicians have declared that they were not involved in the politics of the Soviet regime.

Going back to the Mudde's typology of the major enemies of the populist radical rightists, we can indicate four groups; (a) within the state, within the nation (b) within the state, outside the nation (c) outside the state, within the nation (d) outside the state, outside the nation (Mudde 2007: 71-77).

Applying this typology to the Bulgarian ground shows a large number of enemies within the state and outside the nation, which means all the ethnic and religious minorities, not only Turks or Romas, but also Pomaks (Bulgarian speaking muslims) and Macedonians. There are at least three reasons indicated by Mudde why the populist radical right is afraid of minorities: ethnic groups are/or may be well organized and claim minority rights protection, minorities are linked to the majority ethnicity of a bordering state, and last but not least, ethnic minorities may be a part of a former dominating group in the country. Sometimes all three factors may come together (Mudde 2007: 71-72). Also, there is anti-NATO rhetoric present in ATAKA's declaration from the beginning of its existence, and may be seen as   a threat from the groups outside the state and outside the nation. This shows that the Bulgarian populist radical right is nationalistic and xenophobic, but also strongly anti-elitist. Malivov states that, despite Siderov and ATAKA politicians, 'xenophobia is not a dominant feature of Bulgarian populism'. Instead, Bulgarian populism feeds off of two phenomena: 'a pure hatred of political parties' and the constant emphasis in the public discourse on an alleged contrast between ordinary people and the political elite. This goes so far as to make the elite subservient to the people, an attitude for which Malinov coins the term "radical demophilia" (Malinov 2008).

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[9]   http://www.novinite.com/view_news.php?id=100987 full text of the press conference: http://www.ndt1.com/article.php/20090205212634848

5. Is the Bulgarian populist radical right unique?

One can notice that all the populist parties in Bulgaria are relatively new, what is more, all the populists in Bulgaria are right wing . Characteristically, GERB, as the previous NDSV, came to power in a very short period of time. Populist rhetoric has been used by all of them while being in opposition, and as it became a governing power, the rhetoric changed. The case of ATAKA is different, as the party has never been a part of the government, but after support for GERB was officially declared in 2009, the party 'abandoned its most radical stands and softened its criticism on the minorities and especially as it comes to the role of international institutions' (Chodova 2010: 19). ATAKA seems to be more of a populist radical right party, and GERB, being the party in power now, is a more "democratic" right populist party. As many scholars have spotted, the only parties that may stay populist for a longer period, are those not involved in governmental politics, as the one which became an insider to the political system as they saw a need to change their rhetoric and action while running a government (Mair, 2002; Mudde, 2004; Keman and Krouvel, 2005, Chodova 2010).

A peculiar feature of the Bulgarian populist radical right is a really low level of euroscepticism. In other European countries, populist radical right parties and organizations are usually also eurosceptic, but in the case of Bulgaria, only the ATAKA party included some eurosceptic components in its programme. Interestingly though, this rhetoric also lost its power after the 2007 accession to the EU. Eurosceptic attitudes of ATAKA were mainly caused by its xenophobia and economic fears – as discontent over the closure of the Kozlodoj nuclear power station. A reason for that may be a very high level of support for the European Union among Bulgarian society, and being a eurosceptic in Bulgaria would mean political suicide. Another issue is that society is tired of corruption scandals and the lack of effectiveness of the government, and perceives the EU and its institutions as a natural ally and hopes for a change and normalization of domestic politics.

6. Conclusions

As populist radical right parties are active in the Bulgarian political scene, influencing not only the domestic politics but also relations with the neighboring countries (Turkey and Macedonia), the level of support for the right wing radicals is not increasing and seems to have stabilized. The main populist parties have changed their rhetoric while in office, which proves that only parties that may stay populist for a longer period are these not involved in government politics. The reason for the popularity of the populist radical right in Bulgaria is dissatisfaction with the transformation and ineffectiveness of the local and domestic elites. The main issue is, as Andreev claims, 'the unfinished political and socio-economic transformation, accompanied by the visible persistence of some "reserve domains" from the autocratic period, occupied by the former secret services and semi-mafia structures' (Andreev 2009:11). This stimulates growing discontent, a common lack of understanding of how the political system should work, and gives a perfect floor to the protest parties and their populist slogans.

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RISK, COGNITION
AND WELL-BEING

THE TEACHING OF A MATHEMATICAL COURSE FOR ALBANIAN STUDENTS ENROLLED IN THE ENGLISH LANGUAGE PROGRAM

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This paper presents the results of a study with regard to the way of delivering mathematics lectures for Albanian students that are enrolled in the English language program. The central study question was the following: Are English major students benefitting from a mathematics course when lectures are delivered in English language? Two questions were posed to 120 freshmen students, admitted to the English program due to their high scores received in the English Proficiency Admission Test. During the second semester of the first year in the program these students, grouped in four different sections, were required to take in English the "Basic Mathematics" course delivered by three different instructors. "The slope of a straight line" and "Independent and mutually exclusive events" were two discrete topics delivered during two different sessions. Only these lectures were delivered in Albanian language at a time distance of about two months from each other. "Do you think that presentation of the material in English would appeal to you (a) easier, (b) more difficult and (c) the same?" was the first question posed for all students at the beginning of the first session. Fifty seven percent, 20 percent and 23 percent were the corresponding percentages received for each case. "By hearing the lecture in Albanian did you find it (a) easier to understand, (b) more difficult, (c) no difference at all" was posed to the students at the end of the first session. Forty seven percent, 33 percent, and 20 percent were the corresponding percentages received for each case. The results showed that, although students had the perception of a better understanding of mathematical concepts when delivered in English, at the end of the session they found easier to understand the lecture when it was delivered in their national language. The study found similar results related to the second class. The study concludes that English language students in Albania are able to acquire much better when mathematical content and concepts are delivered in their national language and recommends delivering of this course in Albanian language. The author is aware of limitations of this study consisting in its sample small size, physical context, and the level of English proficiency on the part of Albanian students and instructors. However the value of the study lies in its originality and practicality for the system of higher education in Albania.

Key words: English students, mathematics, understanding.

1. INTRODUCTION

Most of Albanian students are admitted to English language programs of Albanian universities based on their excellent grades obtained in the English language exam, part of National High School Leaving Examinations. Many of them have also obtained English language certificates by well known schools such as Cambridge and Certificates. In addition all students admitted in the program are required to receive high scores in the English Proficiency Admission Test conducted by our university. For the admitted students taking all courses of the program in English is a requirement and part of our university policies. Despite their strong preparation in English these first year students appeared confused when mathematics lectures were presented before them in the English language. This perception was not felt only by the students; it was also felt by the three mathematics instructors, charged to teach the "Basic Mathematics" course for these students. This situation initiated the presented study that took over to test the hypothesis originated by the previous perception. Thus, the main purpose of this study was to answer the following research question: Are English major students benefitting from a mathematics course when lectures are delivered in English language?

In order to answer this question a simple questionnaire with the same questions was administered twice to all English major students that in the period March-June of the last academic year 2008-2009 happened to be freshmen students attending the second semester. The questions asked students about their feelings related to understanding of mathematical concepts involved in two different topics taught by three different mathematics instructors for students grouped in four sections. A short review of existing literature about this topic, the method attended, the obtained results, and discussions about these results are presented below.

2. LITERATURE REVIEW

Most of research related to the topic of this study comes from non-Albanian researchers. Some of them emphasize problems faced by students when they strive to learn mathematical concepts no delivered in their native language. Some others point out that mathematics is a universal language and students of every nationality rapidly become accustomed when lectures are delivered in some other language.

Rishell and Terrell (1986) my be mentioned as representatives of the fist group. They point out that effort should be made by native math teachers to really become successful on their way to teach emigrant children that do not have a good command of English. Papastavridis (1989) makes an excellent comment on his students' graduation ceremony. Concentrating on the chapter of factorization, he did realize that it was the worst written till that time material. His mind was vibrating between what he had

absorbed as a high school student in his native country and what he performed in his every day American teaching practice. The language he had grown up with during his adolescence made its appearance and shaped his thought, although he had spent more of his lifetime in the States.

There are some other authors that promote mathematics as universal language. Thus, Feller (1986), having in mind to employ a within subjects experiment, not to remote himself from his popular and every day statistical language, presented the material before in Greek. Obviously there was terminology that had to be translated right away into the native language and instances when a word-to-word translation inevitably occurred, but in general teaching process has never been seriously interrupted out of a language misconception. Likewise, in their paper presented at the 3rd Meditterenean Conference for Math Education, Hofmannova and Novotna (2003) really sublimated teaching of Math in English before Czech students.

However, there are some other authors that belong to neither above stated group. Mamona (2008) for instance has emphasized that the teaching language, especially when Math is involved, although derived from the national language, is a three-fold set. It is: (1) a language between teaching staff, (2) a language of interaction between teachers and students, and (3) a vocabulary used among students and therefore sometimes slangs might be proven helpful while teaching.

As stated above there is a lack of Albanian studies dedicated to this field. The only study closely related to the topic authors Musai (1998), who states that high school students who study languages in their vocational school of foreign languages display more enthusiasm when they study mathematics and science in Albanian language rather than in their language of study(English, French, or Italian).

3. METHODOLOGY

As stated earlier the main purpose of this study was to answer the research question: Are English major students benefitting from a mathematics course when lectures are delivered in English language? In other words, what is the best way for students to acquire concepts of a mathematics course, when it is delivered in Albanian, the students' native language, or in English, the students' professional language? This research question is established based on the following hypothesis: The English major students, who are admitted in the program due to their excellent English language scores and motivated to be highly proficient in using this language, feel more comfortable when using English in all their classes of the academic program.

In order to test this hypothesis a simple experiment, including 120 students registered in "Basic Mathematics" course, was designed. The experiment was conducted in two phases, which coincided with presentation of two different topics lectured from math instructors at a time distance of about two months from each other. The entire sample of 120 students was part of a bigger amount of first year English major students registered in 4 sections of the mathematics and taught by 3 different math instructors. It is important to point out that "the sample" was called the group of all students that

happened to be present in the four sections at the time when started the first phase. It is to be noted that most of the "\sample" students took also part in the second phase.

The first phase started at the beginning of the class in which the math instructors had planned to teach the topic "The slope of a straight line". This occurred in April 2009. According to the university policies all courses for the English major students were to be delivered in English. Based on an earlier agreement with faculty administration and corresponding math instructors, that particular topic was arranged to be taught in Albanian. Students, not aware of the nature of experiment, at the beginning of the class were asked to answer in written form the question. "Do you think that presentation of this material in English compared with its presentation in Albanian, would appeal to you (a) easier, (b) more difficult and (c) the same?" In addition to a reserved place for the questions papers, distributed to students contained also a space for comments. After collecting the papers that contained the students' answers, the class, unexpectedly by students, went on in Albanian. At the end of the class students were distributed papers that contained a similar question with the previous one: "By hearing the lecture in Albanian did you find it (a) easier to understand, (b) more difficult, (c) no difference at all". The second set of papers that contained students' answers were also collected to be analyzed.

The second phase started in June 2009 and a similar procedure with the previous one was repeated. Similarly, the same questions were administered to the students of the same sections. The second math topic titled "Independent and mutually exclusive events" was taught by the same math instructors. This time, compared with the first phase, the total amount of students was smaller; it numbered 114 students from the four different sections. Most of these students had participated in the first phase. This time all these students were aware of the nature of the experiment. Because of this fact a different result was expected. However, similar results with those of the previous phase were found. These results are presented in the following section.

4. RESULTS

The results of the first phase are presented first. In this phase the topic "The slope of a straight line" was presented. The question posed at the start of this class was: Do you think that by presenting the material in English would appeal to you easier, more difficult or the same. Answers to this question are categorized in Table 1.

Table 1. The distribution of students' answers before the first lesson presentation.

	Easier	More difficult	The same	TOTAL
Number	68	24	28	120
Percentage	57%	20%	23%	100%

Upon finishing the presentation of the topic the following question was presented to students: "By hearing the **lecture in Albanian** did you find it (a) easier to understand, (b) more difficult, (c) no difference at all". The answers are shown in Table 2.

Table 2. Students' answers at the end of the first lesson presented in Albanian.

	Easier	More difficult	No difference	TOTAL
Number	56	40	24	120
Percentage	47%	33%	20%	100%

In the second phase the topic titled "Independent and mutually exclusive events" was presented. Tables 3 contain the results coming out of students' answers to the first question presented at the beginning of this lesson:

Table 3. The distribution of students' answers before the second lesson presentation.

	Easier	More difficult	The same	TOTAL
Number	76	26	12	114
Percentage	66%	23%	11%	100%

Table 4 contains the results coming out of students' answers to the second question asked at the end of the lesson presented in Albanian:

Table 4. Students' answers at the end of the second lesson presented in Albanian.

	Easier	More difficult	No difference	TOTAL
Number	46	38	30	114
Percentage	40%	33%	27%	100%

In addition to these quantitative results studens' comments were taken also into account. Two following particular comments were considered more representative therefore are presented in this paper:

Student A. "At the beginning I really enjoyed the idea of hearing the lecture in English. Nevertheless when hearing the two word compound mutually exclusive, the adverb mutually made me conceptualize more leading me in sort of loosing the next thought of trail. Maybe it is I, but I do prefer the classical native terminology, you get used to it after all".

Student B. "To me, an English major student, math is rather boring subject. Unless it involves visualization like diagrams, sketches etc. it does not seem attractive to me. An innovation such as a language change made me more willing to participate in the activities".

5. CONCLUSIONS AND DISCUSSIONS

By simply viewing the obtained results it may be concluded as follows:

1. Most students have the perception of a better math understanding when lectures are delivered in English, compared with delivering in Albanian.
2. The previous perception does not seem to be true when we see that most students state a better understanding when they hear the math lessons delivered in their native language.
3. Comparing the students' answers given in two different points of time we find the following tendencies: Over time students tend to get more confidence in their abilities to understand math delivered in English and less confidence when these lectures are delivered in their native language.

Although these results are not deducted based on statistical quantitative analyses, they still seem significant. Their significance results from: (a) the experiment repetition, time distance between experiment phases, (c) administration to four different sections, and (d) administration to sections taught by three different instructors with different teaching styles.

From the above conclusion it may be elicited that English language students in Albania are able to acquire much better when mathematical content and concepts are delivered in their native language. Therefore we recommend delivering of this course in Albanian language. However this recommendation may be restrict only in the case when a math course is delivered for only one semester. If a math course is planned to be delivered for a more extended period, the English students may gain the required ability to learn and understand mathematics in English, their professional language.

We are aware of limitations of this study consisting in its sample small size, physical context, and the level of English proficiency on the part of Albanian students and instructors. However we think that the value of the study lies in its originality and practicality for the system of higher education in Albania.

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A COUNT DATA ANALYSIS OF THE DETERMINANTS OF CIGARETTE SMOKING: EVIDENCE FROM THE BRITISH HOUSEHOLD PANEL SURVEY

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The main purpose of this paper is to determine the main reasons behind cigarette smoking in the UK. For this purpose, data from the British Household Panel Survey (BHPS) is used for the year 2007. Rather than focusing on the determinants of cigarette demand, this paper focuses on the individual reasons behind smoking and the effects of individual characteristics on the usual number of cigarettes smoked per day is examined. Since the dependent variable is the number of cigarettes smoked, count data analysis is used to estimate the model. This paper shows that, for the specific data used; the most suitable way to examine the determinants of smoking is via using the zero inflated negative binomial estimation method. The main findings indicate that marital status and presence of other smokers in the household are the two variables that are the most important determinants which affect the number of cigarettes smoked per day for an individual. From a policy perspective, environmental conditions and interactions between individuals should be taken into account while constructing the policies to control smoking behaviour.

Keywords: Count data analysis, cigarette smoking, addictive behaviour

I. Introduction

The decision of cigarette smoking directly affects the health condition of individuals. Smoking is accepted as the cause of numerous diseases such as chronic illnesses, hearth diseases and cancer. World Health Organization accepts smoking behaviour as epidemic. Cigarette smoking is the main preventable cause of death in the world, causing to die nearly 5 million people annually. By 2020, around 10 million people a

year will die from smoking-related diseases in only developing countries (WHO, 1979).

Since smoking is an addiction which is increasing over the years and is the cause of numerous diseases, understanding the factors behind cigarette smoking is important to inform policy makers.

This study provides information on determinants of cigarette smoking in U.K. using the British Household Panel Survey. There are some studies on the determinants of cigarette smoking focusing on different points such as the gender differences in smoking behaviour, the effects of education on smoking incidence (see for example Waldron, 1991; Walque, 2007). In terms of British studies, Jones (1989) estimated the model of starting smoking, quitting smoking and cigarette consumption as separate decisions using the data from General Household Survey. In addition, Jones (1994) examined the individual and household characteristics on decision of quitting smoking using the Health and Lifestyle Survey. In the literature, there are a few studies focusing on determinants of cigarette smoking using count data models.

The structure of the paper is as follows. In the next section, previous literature is presented; Section 3 presents the data and methodology used for the empirical analysis. Possible effects of explanatory variables on cigarette smoking also discussed in this section. Section 4 presents the estimation results and Section 5 concludes.

II. Theoretical and Empirical Background

Jones (1989) estimated the model of starting smoking, quitting smoking and cigarette consumption as separate decisions using the data from General Household Survey and found that the existence of other smokers in the household has a quite significant effect on the smoking behaviour. Jones (1994) also suggested that being in a good health creates an incentive to quit smoking in another study in which he used the Health and Lifestyle Survey.

In the health economics literature, most of studies investigated the relationship between health and education (Grossman, 1972; Kenkel, 1991). In this context, some of these studies have investigated the effect of education on cigarette smoking. Farell and Fuchs (1982) focused on the relationship between schooling and smoking behaviour and found counter evidence that schooling has significant effect on smoking. They explained this situation with unobserved third variable which affects both schooling and smoking. On the other hand, Hsieh et al. (1996) investigated the effect of health knowledge on smoking behaviour and their results were consistent with the general hypothesis that individual`s health knowledge has a significant negative effect on smoking. Walque (2006) analyzed the effect of education on smoking behaviours and found that education affect individual`s smoking decisions and educated individuals are less likely to smoke.

There are also some studies related to determinants of smoking using US data. Wasserman et al. (1991) investigated the effects of excise taxes and regulations on

cigarette smoking using US health survey data and found that more education is related with less cigarette consumption. They also found that married people smoke less than the people who are not married.

Blaylock and Blisard (1992) estimated a double-hurdle model to analyse the relationship between low income women`s socio-economic characteristics and the decisions to start smoking and how much to consume in the US. Their empirical findings indicated that number of children, education, ethnicity and presence of adult male are the most significant variables affecting the cigarette participation decision while region, age, race, ethnicity and health status are the most significant variables influencing consumption volume.

Mullahy (1997) also uses count data models and performs two applications; one that he uses birth weight as a dependent variable and the second one that he uses cigarettes smoked per day (in packs) as a dependent variable. For the second case he uses habit stock, price, restaurant restriction, income, age, education, family size and ethnicity as independent variables. Chaix et al. (2004) investigates tobacco use and consumption levels in France and uses average number of cigarettes smoked per day as a dependent variable. Similarly, they use age, sex, education, occupation, income, employment status and marital status as independent variables.

It should be stated that habit stock and addiction analysis are also widely discussed in cigarette consumption literature but emphasizes the demand dimension (Becker and Murphy, 1988). According to rational addiction theory, the interaction of past and current consumption should take into account in the analysis.

III. Data and Methodology

The BHPS (British Household Panel Survey) is a rich source of data to examine the determinants of cigarette smoking. The BHPS includes information on employment, accommodation, income and wealth, marital and relationship history, socio-economic characteristics and individual and household demographics. However, it does not contain any variables that allow to follow an individual`s smoking history (the age when the individual started smoking etc.).

In order to investigate the determinants of cigarette smoking, count data models are estimated in the empirical analysis. Over the recent decades, count data models, in which the observations can take only the nonnegative integer values, has been widely used in applied econometrics.

The main assumption of the Poisson model is that the dependent variable has the same mean and variance $\mu_{ig} = \exp(\mathbf{X}_{ig}\beta_g^P)$. The Poisson model, on the other hand, has been criticized because of this assumption. Many extensions of the Poisson model that relax this assumption have been proposed in the literature and the Negative Binomial model (NB) is the most common alternative of Poisson model.

NB model relaxes the Poisson assumption that the mean equals the variance while it assumes the same form of the conditional mean as the Poisson model. In the NB model a quadratic relationship between the variance and the mean is assumed as follows:

$$V(C_{ig} \backslash \mathbf{X}_{ig}) = \mu_{ig} + \alpha \, \mu^2_{ig}$$

where α is a scalar parameter which measures the degree of overdispersion in the data.

Zero-inflated models are also frequently used in addition to the Poisson and Negative Binomial regression models in the count data analyses. In some situations, the zero outcome of the data generating process is qualitatively different from the positive ones. The fact constitutes a shortcoming of the Poisson or NB model. In this context, zero-inflated models take into account that data may contain excess zeros, causing a higher probability of zero values than is consistent with the Poisson and NB distribution (Greene, 2003; Winkelmann, 2000).

In the empirical analysis, the Poisson model, NB model and Zero-inflated model are estimated using number of cigarettes per day as a dependent variable. Table 1 presents the variables and their definitions as used in the empirical analysis.

Table 1: Variable Definitions

VARIABLE	DESCRIPTION
Cigday	Number of cigarettes per day
Age	Age in years
Male	1 if individual is male
Income	1 if annual income > £10000
	1 if annual income < £10000 (reference)
Health Status	1 if self-rated health is poor/fair
Education	
No education	1 if individual has no qualification (reference)
O'level	1 if highest qualification is O'level
A'level	1 if highest qualification is A'level
Higher	1 if individual has higher qualifications
Marital Status	
Single	1 if individual is single (reference)
Married	1 if individual is married
Sepdiv	1 if individual is separated, widowed or divorced
Child	1 if there is a child in the household
smoker	1 if there is another smoker in the household

In the literature, health status is generally viewed as a main choice variable in the papers studying on determinants of cigarette smoking (Jones, 1994). Illhealth variable is based on excellent/good/fair/poor scale. It is used as a binary variable that takes the value of 1 if the individual`s self-assessment is fair or poor. According to Blaylock and Blisard (1992), it is not always the case that people in good health are more or less likely to smoke than those reporting bad health. Therefore health status is not a good predictor of smoking participation, but may be associated with the level of cigarette consumption. In this context, it is expected that people in good health at the time of the survey are more likely to smoke than those reporting bad health. On the other hand, there might be an inverse relationship between health status and number of cigarettes smoked per day.

In the analysis, education is one of the most important independent variables. Grossman (1972) states that the most important effect of education on health behaviours occurs with the decisions that educated people make about their lives. More educated people behave more cautiously about serious health threats and constraints. In addition, better educated individuals have better access to information regarding

healthy life styles (Leigh, 1983). In the literature, it is commonly accepted that there is a negative correlation between education and cigarette consumption.

Gender differences in cigarette smoking are another important dimension of cigarette smoking. In almost all countries, it is accepted that males smoke more than females. According to Waldron (1991), one of the most important reasons for gender differences in smoking is that general features of traditional sex roles lead to social pressure against females. To test this hypothesis gender variable is also included in the analysis.

There are a number of studies included the marital status of individuals as an explanatory variable in the analysis (see Wasserman, 1991). Household demographics have important influence on individual cigarette consumption. Number of children in the household and other smokers in the household is commonly used as explanatory variables in the literature (Blaylock and Blisard, 1992; Jones, 1989).

IV. Estimation Results

To investigate the factors behind the number of cigarette smoked per day, count data models described in the last section are used.

Table 2: Estimation Results

Variable	Poisson	Negative Binomial	Zero-inflated
Age	-0.001*	-0.015**	0.0004
	(0.000)	(0.006)	(0.004)
Male	0.473***	0.431***	0.631***
	(0.023)	(0.143)	(0.126)
Income	0.206***	0.232	0.373***
	(0.023)	(0.142)	(0.126)
Health Status	-0.785***	-0.884*	-1.359***
	(0.062)	(0.515)	(0.357)
Education (O'level)	-0.482***	-0.571***	-0.763***
	(0.027)	(0.182)	(0.151)
Education (A'level)	-0.859***	-1.067***	-1.413***
	(0.029)	(0.165)	(0.141)
Education (Higher)	-1.044***	-1.539***	-1.733***
	(0.029)	(0.190)	(0.158)
Marital Status (Married)	-1.438***	-1.850***	-2.683***
	(0.077)	(0.624)	(0.438)
Marital Status (separated, widowed or divorced)	0.800***	0.958***	0.842***
	(0.047)	(0.315)	(0.259)
Child	0.764***	0.483***	1.404***
	(0.030)	(0.186)	(0.178)
Smoker	9.436***	9.819***	10.871***
	(0.088)	(0.992)	(0.268)

Presented values represent marginal effects, standard errors are in parentheses. *, **, *** represent 10%, 5% and 1% significance levels respectively.

Table 2 presents the estimation results of the Poisson, negative binomial and zero inflated models.

Considering the marginal effects, it is possible to say that male individuals smoke, 0.473 more cigarettes per day than female individuals. Individuals that feel less healthy tend to smoke 0.785 less cigarettes per day compared to the individuals feeling healthier. Married individuals smoke 1.438 less cigarettes per day than single individuals. Individuals that are separated, divorced or widowed smoke 0.80 more cigarettes per day compared to single individuals. When we look at the results of education, it is possible to see that individuals with o'levels smoke 0.482 less cigarettes than individuals with no qualifications. Individuals with a'levels smoke 0.859 less cigarettes when compared to individuals with no qualifications and individuals with higher degree smoke 1.044 less cigarettes per day when compared to individuals with no qualifications. As we can easily see from these results education has a negative relationship with the cigarette consumption of individuals and this effect increases gradually as education increases. The biggest effect on cigarette consumption is from the presence of other smokers in the household. Individuals that live in a household with the presence of other smokers smoke 9.436 more cigarettes per day than individuals who does not live with other smokers in the household. Therefore it is possible to say that social interactions and the environment have a really big impact of individuals smoking habit. Individuals who have children in the household smoke 0.764 more cigarettes than individuals who does not have children in the household. As mentioned before this result is quite surprising, because the effect of presence of children in the household is expected to have a negative impact on cigarette consumption. Finally individuals who earn more than £10.000 pounds a year smoke 0.206 more cigarettes at a given day when compared to individuals who earn less than £10.000 annually. This result is again surprising since smoking is an addictive behaviour. However these results suggest that income has an important and significant effect on the smoking behaviour.

Results from the negative binomial model suggest that the most important effect on cigarettes smoked per day by an individual is from the presence of other smokers in the household; furthermore it has a bigger impact when we compare the results with the Poisson model. Similarly, the impact of education is bigger when compared with the results from the Poisson model. These results suggest that individuals with o'levels smoke 0.571 less cigarettes, individuals with a'levels smoke 1.067 less cigarettes and individuals with higher education smoke 1.539 less cigarettes when compared to individuals with no qualifications. Similarly the impact of marital status on cigarette consumption is bigger. Married individuals smoke 1.85 less cigarettes and individuals who are separated, widowed and divorced smoke 0.958 more cigarettes when compared to single individuals.

In the data set, there can be many zeros which mean that most of individuals smoke zero cigarettes per day. Graph 1 shows that zero values are quite high in the data which indicates that zero inflated model can be preferred to Poisson and NB model. However, it should be stated that having many zero values does not automatically mean that a-zero inflated model is the best model.

Graph 1: Distribution of the Dependent Variable
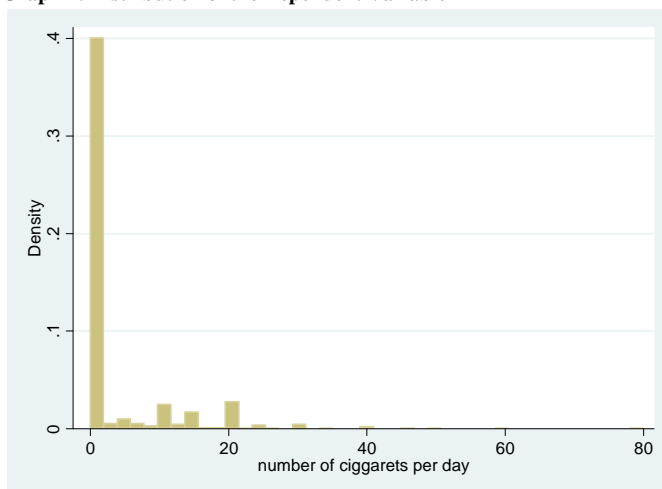
The over dispersion of the Poisson, negative binomial and the zero inflated models are checked. The result from over dispersion and the histogram of the dependent variable indicate that the zero inflated model is best explaining cigarette smoking behaviour.

The results from the last column shows the probability of smoking zero cigarettes for individuals and all of the variables except age are statistically significant. The results suggest that older individuals have higher probability of smoking zero cigarettes per day. Male individuals are less likely to smoke zero cigarettes per day than female individuals. Married individuals are more likely to smoke zero cigarettes and individuals who are separated, divorced or widowed are less likely to smoke zero cigarettes per day. Individuals with o'levels, a'levels and higher degrees have higher probabilities to smoke zero cigarettes per day when compared to individuals with no qualifications. Individuals who live with other smokers in the household are less likely to smoke zero cigarettes per day. Individuals with children in the household are also less likely to smoke zero cigarettes per day and finally individuals who has an annual income more than £10.000 a year are less likely smoke zero cigarettes per day.

V. Conclusion

This study investigates the individual and socio-economic factors behind the number of cigarette smoked per day in U.K. using count data models. The zero-inflated negative binomial model is selected as the preferred specification. Results indicate that presence of other smokers in the household has the biggest impact on cigarettes smoked per day for an individual suggesting that the social environment of the individual is important as a determinant of smoking. Even though smoking is an addictive behaviour income has an important impact on the number of cigarettes smoked per day. In addition, married people have less likely to smoke compared to single people and higher

education levels have important impact on less smoking. The results also suggest that being in poor health status creates an incentive to smoke fewer cigarettes. From a policy perspective, environmental conditions and interactions between individuals should be taken into account while constructing the policies to control smoking behaviour.

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Attentional processes in children and adults bilingual in Greek and Albanian.

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As bilingualism is now a universal demographic characteristic, the need for studying the cognitive processes involved in this phenomenon is considered highly important. Studying the attention processes involved in bilingualism offers a pathway towards this goal, as attention is the main cognitive mediator of language. Although numerous studies have investigated executive attentional control in bilingualism, the findings are contradicting and have methodological limitations. One of these limitations is the absence of control for SES that has been repeatedly shown to influence the performance of both monolinguals and bilinguals on cognitive tasks. In addition, two functions of attention, alertness and visuospatial orienting, have been largely ignored in studies of bilingualism. To our knowledge, only two studies have investigated the 3 attention networks (i.e. executive attentional control, alertness & orienting) in bilingual individuals. Additionally, the possible effect of bilingualism in the Joint Attention (JA) effect has never been investigated, although it can be assumed to be influenced by bilingualism. Hence, the aim of the present study is to investigate the 3 attention networks and JA in bilingual children and adults, taking into account the SES factor.

Keywords: bilingualism, attention, SES, Albanian, Joint Attention, language switching task

1. Introduction

As psycholinguistic research has shown, in order to understand fully the function of language we need to take into account other cognitive processes that are inherently involved in language use, such as attention (Garnham, 1985). Rather than trying to study language in a vacuum, it is more appropriate to examine specific language phenomena in order to unravel the exact cognitive processes underlying the language function. One of these phenomena is bilingualism (i.e. being proficient in two languages; Martin, 2006). In the contemporary world, bilingualism is considered to be the universal norm rather than the exception (Segalowitz & Frenkiel-Fishman, 2005). Hence, it seems necessary to fully understand the cognitive components of bilingualism, not only because it will allow for a more clear understanding of cognition (Bialystok & Martin, 2004) and the nature of language use itself (Kolers & Paradis, 1980), but also because it is a universal demographic characteristic (Arlida et al., 2000; Segalowitz & Frenkiel-Fishman, 2005).

Numerous studies have attempted to investigate the effect of bilingualism on cognitive processes (e.g. Bialystok et al., 2005; Bialystok & De Pape, 2009; Bialystok & Martin, 2004; Colzato et al., 2008; Costa, Hernández & Sebastian-Galles, 2008; Morton & Harper, 2007), supporting a 'bilingual advantage" on the executive functions that include the control of attention. However, often studies conducted so far had several methodological limitations (Morton & Harper, 2007; Colzato et al., 2008). One of the most important concerns the lack of control for Socio-Economic Status (SES) of the participants. That is, the bilingual group may have had a higher socio-economic status than the monolingual group and so effects may be due to SES rather than bilingualism per sé. Importantly, SES has been repeatedly shown to influence the performance of both monolinguals and bilinguals on cognitive tasks (e.g. Mezzacappa, 2004; Siegal, Surian, Matsuo, Geraci, Iozzi, Okumura et al., 2010).

Moreover, while executive attention (e.g. conflict resolution; goal-directed attention) has been relatively well studied, the two other functions of attention, alertness and visuospatial orienting, have been largely ignored in studies of bilingualism. To our knowledge, only two studies have investigated the three attention networks (i.e. executive attentional control, alertness & orienting; Posner & Boies, 1971; Posner & Petersen, 1990) in bilingual individuals (Costa, Hernández & Sebastian-Gallés, 2008; Hernández, Costa, Fuéntes, Vivas & Sebastian-Gallés, 2010). Neither of these studies involved children. Hence, the aim of the proposed study is to investigate the three attention networks of bilinguals, taking into account the SES factor. To this end, Albanian-Greek bilinguals have been chosen as the target population who, according to the Greek Statistical Authority (2010), are of a rather low SES.

Of interest would be to also explore how these attention networks mature in the bilingual mind, which would give a more complete view of the bilingual effect on attention. Thus, this study is suggested to include both children and adults. As a measure of the three main attentional networks, the ANT task has been chosen, which has been demonstrated to validly and reliably measure the three networks of attention (e.g. Rueda et al., 2005), and is available in two versions: one for children (ANT Child task; Rueda et al., 2004) and one for adults (ANT; Fan et al., 2002).

In addition, we will investigate the effect of type of spatial cue on the bilingual advantage. That is, in the two studies (Colzato et al. 2008; Hernández et al., 2010), that investigated visuospatial orienting, the cues used to direct attention were non-symbolic, exogenous cues (i.e. luminance of a peripheral box), although it has been claimed that the "bilingual advantage" seems to generalize to other tasks involving symbolic stimuli (e.g. Bialystok & De Pape, 2009). Unlike exogenous cues, symbolic cues (e.g. arrows, words, faces, gaze) require a level of interpretation to direct attention, and depend more likely on endogenous attention processes (Frischen, Bayliss & Tipper, 2007). Thus, it could be the case that lack of a bilingual advantage on attentional orienting could be attributed to the nature of the cues used in those tasks. We will employ the Joint Attention (JA) paradigm (e.g. Frischen & Tipper, 2004) which has shown that there is a benefit in performance when a target appears in the location indicated by the gaze (i.e. schematic faces gazing right/left). However the unique case of gaze cues, which are claimed to elicit both endogenous and exogenous orienting of attention (e.g. Frischen et al., 2007) has not been investigated yet in bilingual individuals and this is another reason why studying bilingualism via a JA task is very interesting and unique.

In addition to attentional orienting by a visual cue, another bottom-up attention phenomenon which can be tested by a JA paradigm is Inhibition Of Return (IOR; avoid to re-focus attention on an already processed target; Posner& Cohen, 1984). Interestingly, only two studies have tested the IOR effect in bilinguals (Colzato et al., 2008; Hernández et al., 2010). According to Colzato et al. (2008), bilingualism seems to modulate IOR, as bilinguals exhibited an IOR effect in much longer SOAs than expected (i.e. in 700ms, whereas should be present in about 300ms; Colzato et al., 2008). According to the efficient search account of IOR , whereby IOR serves to avoid possible needless re-processing of an already processed location (e.g. Fuentes, Vivas, & Humphreys,1999), such inflexible IOR ability is not beneficial, thus supporting a bilingual disadvantage in this type o inhibition. However, other studies investigating types of inhibition other than IOR (e.g. Bialystok, 2006; Bialystok & De Pape, 2009) claim that bilinguals possess a more efficient inhibitory ability compared to monolinguals, that results in a bilingual advantage in inhibition.

This debate on the nature of a bilingual advantage in inhibition can be elucidated further by employing the JA task in bilinguals, which elicits IOR. If this "bilingual advantage" generalizes to IOR, according to the aforementioned efficient search account of IOR bilinguals should manifest IOR earlier than monolinguals, thus executing a visual search of space more efficiently. By contrast, if bilinguals exhibit IOR in much longer SOAs, as was the case in the study of Colzato et al.(2008), they will display less flexible inhibitory ability, which regarding the efficient search account of IOR is not beneficial.

Another innovation in the present study, as compared to previous studies on bilingualism, concerns how level of bilingual skill is measured. Most studies of the bilingual effect on cognition (e.g. Costa, Hernández & Sebastian-Gallés, 2006; Garrat & Kelly, 2008; Portocarrero et al., 2007) have used a self-report questionnaire on

language use and background to measure the participants' level of bilingualism. However, according to the review of Mindt et al. (2008), the subjectivity of such a measure should not be underestimated. Thus, we will employ a more objective measure of bilingual skill, the numerical language-switching task (Meuter & Allport, 1999). This task appears to be valid as an index of language proficiency in bilingual individuals (Costa & Santebastian, 2004; Meuter & Allport, 1999). However, to our knowledge this task has not been employed in bilingual children, which calls for the need to adapt the language switching task appropriately to match the abilities of young children.

2. Method

Participants

Participants will be divided in three age-groups, one for younger children (ranging from 60 to 84 months of age), one for older children (from 85 to 120 months old) and one for adults (age range of 18 to 42 years old), with 50 participants in each age group (25 bilingual and 25 monolingual). Children will be recruited from randomly selected schools in the western area of Thessaloniki, after a license has been granted from the Greek Ministry of Education, Religion and Lifelong Learning and after their parents have provided an informed consent for their children's participation. Bilingual adults will be recruited from the Albanian associations and monolingual adults will be recruited from the numerous Greek folk associations situated in Thessaloniki and we will also obtain written informed consent.

Material and Procedure

The proposed attention tasks, ANT (Child & adult version) and JA and the language-switching task will be in a computerized form, thus enabling easy administration and precise recording of reaction times in milliseconds. In the ANT Child task (see Figure 1), children will be asked to feed the hungry central fish that will be appearing on screen as soon as possible, by pushing either the left or the right mouse-button, according to the orientation of that fish. Additionally, they will be instructed that sometimes the fish will be appearing alone and sometimes it would be swimming with other fish; in such a case, they will be told to focus on the central fish and press the button corresponding to that fish's orientation only, so as to feed it. The ANT for adults will be identical to the Child ANT, with the exception that the fish-stimuli will be replaced by arrows and participants will be asked to respond to the direction of the central arrow by pressing the corresponding mouse-button.
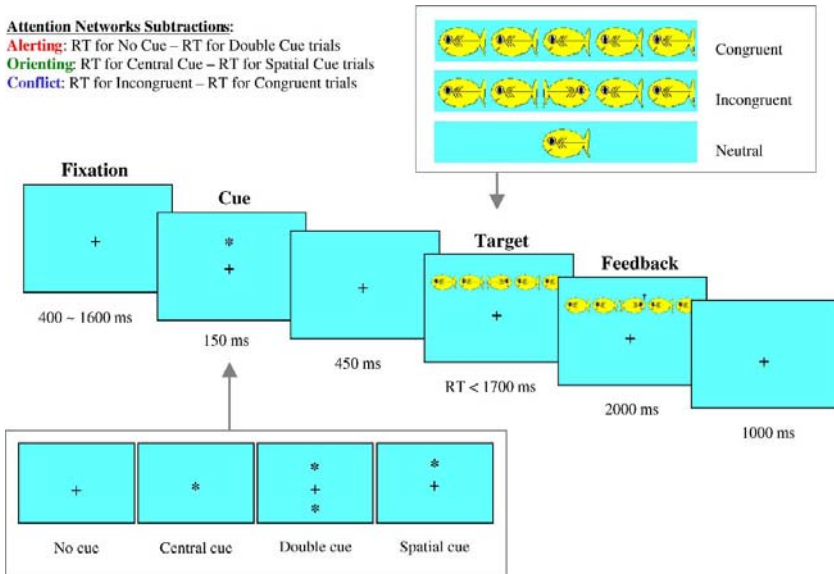
Fig.1. An example of a typical ANT Child trial as well as all the experimental conditions and the stimuli used in the ANT Child task (adopted from Rueda et al. 2004).

The JA task (see Figure 2) will be a detection task, executed by adults only. Participants will be instructed to fixate at the center of the screen throughout the procedure and will be encouraged to respond by pressing the space bar as soon as they see the target but without making anticipated responses. We will include catch trials to ensure that the participants will follow these instructions. On each trial, the central fixation point will appear for 1000ms. This will be followed by the same fixation flanked by 2 boxes during another 1000ms. After, the cross will be replaced by a face-stimulus with averted gaze towards the left or right for 150ms. Depending on the SOA (Stimulus Onset Asynchrony) condition, after a further interval of 350, 550, 1500 or2550ms (350, 550, 1500, 2550 SOA) the cue will be replaced by the same face stimulus, with direct gaze during 150 (the central cue). Finally the target will appear at the same location of the gaze or at the opposite location. In some of the trials (catch trials) the target will not appear and participants will be instructed to withhold their response and wait until the next trial begins.
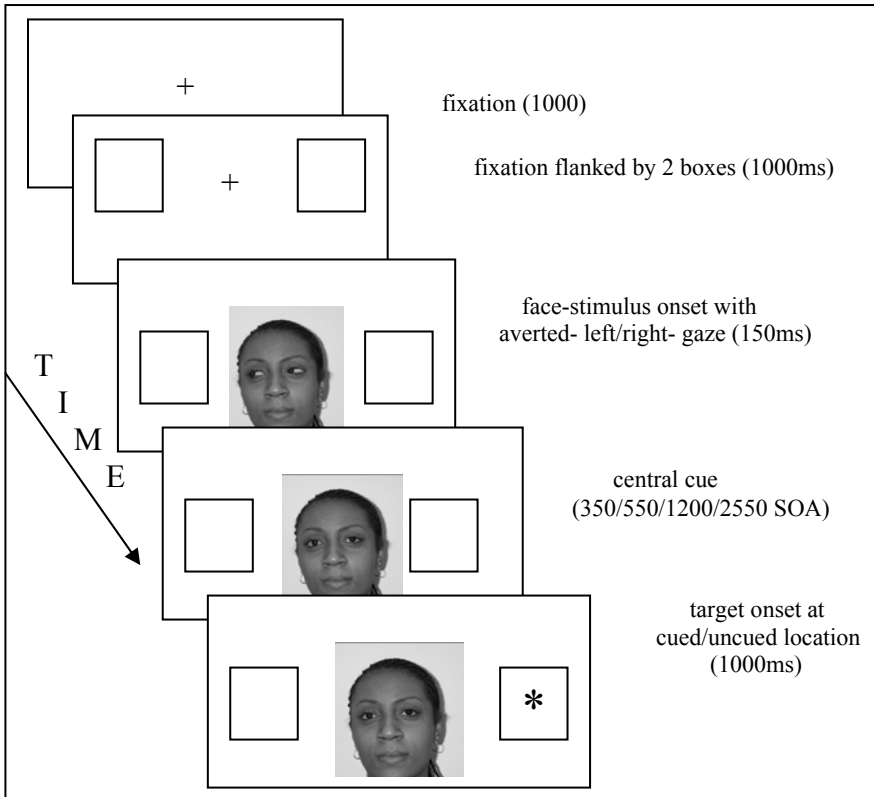
Fig.2. Sequence of events in a typical trial. In this example-trial, the averted gaze is directed to the left and the target appears at the uncued location (right).

The measure of bilingual skill will include Arabic digits (1-9) as target stimuli which participants will be asked to read aloud in either language. The background will be either a Greek or an Albanian colored flag (depending on the condition), serving as the language cue by prompting participants to read the digit in the analogous language. For adults, digits will be presented in short sequences ("lists"), varying unpredictably in length from 5 to 14 items. Within each list, generation of digits will be random; no number will be presented twice in a row. Trials will be of two types: (1) trials where the language of response will be the same, either L1 or L2, as in the previous trial (non-switch trials), and (2) trials where the language of response, either L1 or L2, will be different than the language used in the preceding trial (switch trials). Number of switching trials within the lists will vary (from 0 to 4 switch-trials). Response in L1 will be required for half of the trials and in L2 for the other half.

Due to children's young age and the task demands, considered possibly too high for their age (M. Siegal, personal communication, April 10 2010), instead of digit lists thus random presentation of digits, the target stimuli will be presented in sequence (from 1 to 10). Additionally, the language cue will change in each trial, thus all trials will require a switch from L1 to L2 and vice-versa.

Since a measure of intelligence has not yet been standardized for the Albanian population (e.g. Zimmerman, Connolly, Bozo, Bridson, Rohner & Grimci, 2006), the following intelligence tests will be used to match the bilingual and monolingual groups. The Raven's Standard Progressive Matrices (SPM; Raven, 1958) and the Raven's Coloured Progressive Matrices (CPM; Raven, Court & Raven, 1986) will be used to measure general intelligence in adults and children respectively, which is considered to be a relatively culture-free, reliable and valid measure of Spearman's g (Raven, 2000; Wicherts et al., 2010). As an indicator of verbal intelligence, the Vocabulary subtest of the Weschler Adult Intelligence Scale- version III (WAIS-III; 1997) and the Weschler Intelligence Scale for Children-version III (WISC-III; 1991) will be administered. As norms for this test are not available yet for Albanians, the teachers of the bilingual children will be asked to provide ratings of the children's Albanian vocabulary, where applicable, which will then be correlated with the Greek norms for this test. Additionally, a psychologist of Albanian nationality will score the children and the adults on the Albanian vocabulary test, from the participants' recorded answers.

Demographic information, SES and the qualitative aspect of language use will be recorded by a self-reported socio-linguistic questionnaire based on previous studies of bilingualism and its hypothesized effect on cognitive processes, which have demonstrated to reliably and validly measure these demographic and language use aspects (Brown, Bown & Eggett, 2009; Costa, Hernández & Sebastian-Gallés, 2006; Garrat & Kelly, 2008; Portocarrero et al., 2007). Importantly, although the questions are simply translated in Greek (for Greek monolinguals) and Albanian (for Albanian bilinguals) from the English language questionnaires, the language in which a self-rated questionnaire on bilingual language background is written does not appear to have an effect on the ratings (Delgado et al., 1999). For children, the questionnaire will be completed by their parents.

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Understanding noncompliance with the smoking ban in Albania:
General Theory of Deterrence vs. Descriptive norms

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Background and Aims **The General Theory of Deterrence (GTD) suggests that noncompliance to the law is the result of weak personal, social, and moral deterrents. Noncompliance to the smoking ban is a major issue in Albania and research evidence has suggested that this phenomenon is best explicable through a social norms approach. The aim of the present study was to test the relative importance of predictors from GTD vs. Descriptive norms in understanding noncompliance to the smoking ban.** *Methodology* **Participants were 804 university students, out of which 257 were smokers. The measure was a self-report questionnaire based on existing measures.** *Results* **Two regression analyses were conducted separately by gender. Results showed that irrespective of gender descriptive norms predicted noncompliance behaviour even after controlling for legal, moral, and social deterrents.** *Implications* **The present findings have both practical and theoretical importance in understanding the phenomenon of noncompliance in highly normative contexts.**

keywords: noncompliance, Albania, smoking ban

1. Introduction

The growing scientific evidence regarding the harmful health effects of environmental tobacco smoke (see US Surgeon General's Report, 2006) has enhanced the need for legal control of the smoking epidemic across countries. In April 2006 Albania introduced for the first time a smoking ban in all public places. However, evidence up to date has suggested serious implementation problems, especially in terms of the very high noncompliance rates (e.g., Melonashi, Rodafinos, Eiser, Lazuras, & Zlatev, 2009).

Traditionally the investigation of the compliance phenomenon in the context of law abidingness has focused on identifying the strongest deterrent mechanisms to noncompliance, i.e., factors that prevent the occurrence of the behaviour. The basic premise behind most theories is that people posses a constant and universal urge for noncompliance, when it comes to behaviours that are in their self-interest; however, the extent to which they experience constraints, controls this urge to deviate (Hirschi & Gottfredson, 1983).

One of the most encompassing theories in this context is the general theory of deterrence (GTD; Grasmick & Bursik, 1990). GTD focuses on the perceived costs of noncompliance behaviour on each of the three domains, personal, social, and legal. Personal costs include: shame, guilt, or loss of self esteem for engaging in behaviours that are inconsistent with one's self-concept. Social costs include embarrassment, loss of respect, or loss of social support for engaging in behaviours disapproved by the society. Finally, legal costs include consequences like fines or incarceration. Each of these costs has two dimensions: perceived certainty (e.g., how likely it is that I will be fined) and perceived severity of the cost (e.g., how much of a problem would this be for me).

Overall, GTD provides a quite useful framework in understanding noncompliance to the law. However, a main issue with this theory is that although it incorporates injunctive norms within the social deterrence component, it totally neglects descriptive norms, i.e., people's perceptions of actions that are typically performed (Reno, Cialdini, & Kallgren, 1993). Nonetheless, the exclusion of descriptive norms from GTD is quite understandable considering that most theoretical work and practical research has focused on behaviours with which the majority of the population complies (i.e., descriptive norms are in favour of compliance with behaviours like tax payment etc).However, in settings where descriptive norms favour noncompliance, they seem to be particularly strong predictors of this behaviour (Lazuras et al., 2009).

Therefore within the Albanian context, a consideration of descriptive norms in conjunction with GTD seems to be necessary; in fact there is already evidence of strong descriptive norms favouring noncompliance behaviour (e.g., Melonashi et al., 2009). Hence, an important question to be addressed is the following: how well does GTD account for noncompliance behaviour in a highly normative context? Therefore the purpose of the present study was to assess the relative importance of descriptive norms vs. legal, moral, and social deterrents in predicting noncompliance behaviour. In addition to descriptive norms of noncompliance, descriptive norms of assertiveness of non smokers were investigated (i.e., smokers perceptions of how non-smokers behave).

This broadening of perspective allowed a more complete understanding of the phenomenon, especially as regards the way in which smokers and non-smokers' behaviours might interacting to produce 'the noncompliant Albanian reality.'

Finally, considering the remarkable gender differences in smoking behaviour in Albania (60% in men and 18% in women; World Health Organization, 2007), as well as the indications towards some gender differences in noncompliance (e.g., Melonashi et al., 2009) it was suggested that this phenomenon might be qualitatively different for men and women. For instance, it might be that the traditional gender roles that somehow 'control' female smoking in Albania might also make smoking women more sensitive towards moral or social deterrents, while this might not be the case for males. Therefore, the relative importance of predictors from GTD vs. Descriptive norms was tested separately for men and women, in order to make more specific conclusions.

2. Method

Participants

The initial sample consisted of 850 Albanian university students. The response rate was high, as 804 of them returned the completed questionnaires (94.6%). Hence, the final sample consisted of 242 males and 562 females, M_{age} = 20.49, SD = 1.76, of which 546 were nonsmokers (68%) and 257 smokers (32%). The smokers subsample, $Mage$ = 20.88, SD = 1.78, consisted of 146 males (56.8%) and 111 females (43.2%).

Materials

The measure used in the present study was largely based on the measures used in previous research. The questionnaire had three sections, to be completed by everyone (Section 1), non smokers only (Section 2), and smokers only (Section 3). For the purpose of the present paper, only parts of the questionnaire that was used in the larger study were used.

Descriptive norms of smoking and noncompliance behaviour were measured in terms of perceived frequency of noncompliance behaviour. This type of measurement was used in a recent paper by Lazuras et al. (2009). Examples include "When you visit eating establishments/drinking establishments/university, how often do you see people smoking in areas where it is not allowed?" Response options were coded on a Likert scale from 1 (*never*) to 5 (*almost always*). The present scale showed acceptable internal consistency (α = .78).

The measure of *descriptive norms of assertiveness* was adopted from Aspropoulos, Lazuras, Rodafinos, and Eiser (2010), with few changes. Examples include "How often do you see someone ask a smoker not to smoke when you visit eating establishments/drinking establishments/university?" with response options from 1 (*never*) to 5 (*almost always*). The scale had acceptable internal consistency (α = .75).

Smoking behaviour was measured with the following item: "Which statement best describes your current smoking status?" with response options "I have never smoked," "I have smoked but less than five cigarettes ever," "I smoke but only a few cigarettes a week," "I smoke at least one cigarette a day," and "I used to smoke but I have given up." Occasional (weekly) and daily smokers were also asked to report on the exact number of cigarettes they smoked. Smoking behaviour was then dichotomized into current smokers (including occasional and daily smokers) and current non smokers (all the rest).

Reported noncompliance behaviour was measured through a set of three items 'How often do you smoke in smoke-free areas when you visit eating establishments/drinking establishments/university?' with response options from 1 (*never*) to 5 (*almost always*) and the non-applicable option 'There are no smoke free areas.' The scale had acceptable internal consistency ($\alpha = .77$).

The measures of *legal, social, and moral deterrents* were based on the suggestions of Grasmick and Bryjak (1980) for measuring deterrence effects. Therefore, the present questionnaire measured smokers' perceptions of their likelihood of being punished (nine items), feeling guilty (three items) or losing the respect of significant others (three items), in case they smoke in smoke-free environments (e.g., in eating/drinking establishments or in the university). Examples include: 'What is the likelihood that you will get a fine for smoking in drinking establishments' with response options 1 (*very unlikely*) to 5 (*very likely*). The subscales measuring likelihood of being punished, feeling guilty, or losing the respect of others had good internal consistency ranging from ($\alpha = .86$) in 'perceived likelihood of being punished' subscale to ($\alpha = .94$), in the perceived likelihood of losing respect of significant others' subscale.

Furthermore, perceptions of the severity of each of the above scenarios was also assessed through items like 'How much of a problem do you think it would it be for a smoker if they were fined in eating/drinking establishments or university?' with response options from 1 (*no problem at all*) to 5 (*Very big problem*). These subscales also had good internal consistency ranging from ($\alpha = .84$) in perceived severity of feeling guilty subscale to ($\alpha = .92$), in 'perceived severity of losing the respect of others' subscale.

Procedure

Permission to collect data was sought and granted by the respective authorities of two universities in Korca and one in Tirana. Subsequently students were approached by the researcher and were given a sheet with information about the study, along with consent forms. Questionnaires were given to students who agreed to participate, along with contact information of the researcher, in case they were interested about the results of the study.

3. Results

The overall smoking rate in the present sample was 32% (66% in men and 19.8% in women). Noncompliance behaviour in public places was reported as occurring 'sometimes' ($M = 2.80$, $SD = 1.16$); however, men reported a significantly higher frequency of noncompliance as compared to women, t (249) = 3.53, $p < .001$. Additionally, there were significant gender differences in five out of the eight independent variables (See Table 1).

Table 1

Gender Differences in Legal, Moral, Social Deterrents, Descriptive Norms of Noncompliance and Descriptive Norms of Assertiveness.

Variable	Means		t-value
	Men	Women	
Likelihood of being punished	1.81	2.07*	-2.22
Severity of being punished	3.39	3.13	1.91
Likelihood of feeling guilty	2.41	3.04**	-3.70
Severity of feeling guilty	2.64	3.06*	-2.49
Likelihood of losing respect	2.13	2.64**	-2.70
Severity of losing respect	3.64	4.04*	-2.53
Descriptive norms of noncompliance	2.13	2.32	-1.57
Descriptive norms of assertiveness behaviour	4.17	4.17	.11

Note. *$p < .05$, ** $p < .01$

Considering the significant gender differences in both dependent and independent variables, two separate regressions were run according to gender. The first 3 steps of the regression included the Legal, Moral, and Social deterrents, entered in this order. In the two final steps of the regression descriptive norms of noncompliance and assertiveness were entered.

As regards males, results showed that variables from the GTD did not produce a significant predictive model, F (6, 137) = .90, $p > .05$. Nonetheless, when descriptive norms of noncompliance and of assertiveness were entered, a significant model resulted F (8, 135) = 3.70, $p < .01$. The addition of descriptive norms of noncompliance produced the largest R^2 change (see Table 2), and the model explained 18% of the total variance.

Predictors from the GTD produced a significant model $F (6, 99) = 2.96, p < .01$ among females, which explained 15.2% of the variance in noncompliance. However, the only component producing a significant change was the legal deterrence component, i.e., perceived severity of punishment, which remained significant even after entering descriptive norms into the regression (See Table 3). The addition of descriptive norms of noncompliance into the model produced a significant change in R^2 so that the final model explained 19.1% of the variance in noncompliance, $F (8, 97) = 2.86, p < .01$.

Table 2
Hierarchical Regression of Reported Noncompliance Behaviour into the Predictors from the General Theory of Deterrence, Descriptive Norms of Noncompliance and of Assertiveness Behaviour in Males.

Step	Predictors	B	R^2
1	Likelihood of being punished	-.08	.032
	Severity of being punished	.13	
2	Likelihood of being punished	-.07	.033
	Severity of being punished	.13	
	Likelihood of feeling guilty	.03	
	Severity of feeling guilty	-.05	
3	Likelihood of being punished	-.09	.038
	Severity of being punished	.13	
	Likelihood of feeling guilty	-.01	
	Severity of feeling guilty	-.07	
	Likelihood of losing respect	.09	
	Severity of losing respect	-.01	
4	Likelihood of being punished	-.04	.154
	Severity of being punished	.09	
	Likelihood of feeling guilty	-.04	
	Severity of feeling guilty	-.03	
	Likelihood of losing respect	.14	
	Severity of losing respect	-.07	
	Descriptive norms of noncompliance in public places	.36**	

Step	Predictors	B	R^2
5	Likelihood of being punished	.02	.180
	Severity of being punished	.08	
	Likelihood of feeling guilty	-.02	
	Severity of feeling guilty	-.05	
	Likelihood of losing respect	.13	
	Severity of losing respect	-.08	
	Descriptive norms of noncompliance in public places	.33**	
	Descriptive norms of assertiveness behaviour		
		-.18*	

Note. ** $p < .01$, * $p < .05$

Table 3

Hierarchical Regression of Reported Noncompliance Behaviour into the Predictors from the General Theory of Deterrence, Descriptive Norms of Noncompliance and of Assertiveness Behaviour in Females.

Step	Predictors	B	R^2
1	Likelihood of being punished	.03	.105
	Severity of being punished	.33**	
2	Likelihood of being punished	.05	.123
	Severity of being punished	.28**	
	Likelihood of feeling guilty	-.21	
	Severity of feeling guilty	.14	
3	Likelihood of being punished	-.02	.152
	Severity of being punished	.28**	
	Likelihood of feeling guilty	-.26	
	Severity of feeling guilty	.12	
	Likelihood of losing respect	.20	
	Severity of losing respect	-.09	
4	Likelihood of being punished	.01	.190
	Severity of being punished	.25*	
	Likelihood of feeling guilty	-.19	

	Severity of feeling guilty	.11		
	Likelihood of losing respect	.21		
	Severity of losing respect	-.12		
	Descriptive norms of noncompliance in public places	.21*		
5	Likelihood of being punished	.01		.191
	Severity of being punished	.25*		
	Likelihood of feeling guilty	-.19		
	Severity of feeling guilty	.11		
	Likelihood of losing respect	.20		
	Severity of losing respect	-.12		
	Descriptive norms of noncompliance in public places	.21*		
	Descriptive norms of assertiveness behaviour			
		.02		

Note. **p<.01, *p<.05

4. Discussion

The purpose of the present study was to assess the respective influence of legal, moral, and social deterrents compared to descriptive norms on noncompliance to the smoking ban in Albania. Results showed that descriptive norms predicted noncompliance behaviour even after controlling for legal, moral, and social deterrents. This finding was consistent for both men and women, and suggests that a consideration of descriptive norms is important in understanding noncompliance behaviour in highly normative contexts. As regards gender differences, men tended to score lower than women in almost all components of GTD (except for perceived severity). The results are consistent with existing research, which explains the lower threats of embarrassment, shame, and legal sanctions in men in terms of the differential socialization process and gender roles (Mears, Ploeger, & Warr, 1998). However, no gender differences were found as regards descriptive norms, i.e., it seems as if both men and women perceive the same reality. Nonetheless it should be noted that the impact of these norms on the respective behaviours was different; i.e., while for females norms were merely one of the additional factors explaining noncompliance, for males they were the most important factor. On the other hand, predictors from the GTD were quite relevant in explaining noncompliance among females but totally useless in explaining this behaviour in males.

More specifically, among females only one predictor from GTD was significant (i.e., perceived severity of punishment), albeit in the opposite direction than expected. Specifically, smoking women who tended to perceive the punishment as more severe also tended to report more frequent noncompliance. These findings might be

interpreted within the context of reactance theory (see Brehm, 1989), i.e., it might be that smoking women 'react' against the severity of punishment, which is perceived as unfair by them. Although not significant, the same pattern also appeared in men, suggesting that reactance might indeed be a plausible explanation.

However, this variable seems to be more important in women, probably due to the fact that they might be more likely to associate smoking to freedom and assertion of one's rights, in a society that stigmatizes this behaviour within the particular gender category. Obviously this is not much of an issue for men, whose smoking behaviour has got social approval. The same pattern also appears in the context of descriptive norms of assertiveness (i.e., the stronger the descriptive norms of assertiveness, the higher the noncompliance among women), suggesting that reactance might be an important aspect to consider among women.

Noncompliance among men, on the other hand, does not seem to be a product of reactance, but rather a socially driven behaviour, since they seem to be attentive to both descriptive norms of compliance and of assertiveness. Therefore it seems like men are picking up environmental cues in order to figure out what is the right behavioural repertoire. Therefore the issue of noncompliance in men might be addressed through enforcement of the legal measures (i.e., reducing the exposure to noncompliant models) or the encouragement of assertiveness behaviour among non smokers.

However, noncompliance among smoking women seems to be more controversial, because a reinforcement of measures might actually produce even more noncompliance (reactance). Therefore the informative/educational approach (e.g., health effects of passive smoke) might work better with women, in order to reduce their reactance and reinforce deterrent components such as guilt/shame that are quite prominent among women.

To conclude, the present findings should be considered in the context of the limitations of the study including the self-report measure, the cross-sectional nature, the narrow age category (young adults). Nonetheless, the present findings have both practical and theoretical importance in understanding the phenomenon of noncompliance.

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An integrative approach to drug treatment evaluation: Client level factors as indicators of treatment engagement

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1. Introduction

Client engagement is perceived as a key mediator of positive outcome in substance misuse treatment (Simpson, 2001). Research indicates that treatment motivation and therapeutic alliance represent determining factors of client engagement and reduce the risk of drop-out (De Leon et al., 2000; Meier et al., 2005). Therefore, there is a critical need to evaluate and develop treatment responses that facilitate treatment engagement and target clients' major attrition vulnerabilities. In this context, of particular concern is the complex relationship among clients' long lasting, enduring personality traits and their phenotypic expression within treatment process. This paper presents a brief overview of several main reasons that indicate the importance of capturing the role of personality traits in treatment process.

Disentangling the major overlap among personality traits from disorders

Current shift in research evolved towards the recognition that a number of personality traits commonly observed in drug users do not necessarily reflect pathological states separating substance use from personality pathology (Lowe & Widiger, 2009; Krueger,2007). Several authors suggests that that categorical model should be re-conceptualized by including progressive methods of dimensional assessment (Ball, 2005; Jackim, 2005; Flynn & Brown, 2008) and discriminating normal and abnormal personality traits (Livesley, 2007; Trull & Durrett, 2005). Thus, disentangling traits from disorders based on a continuum of their intensity and severity indicates the clinical utility of dimensional approach as it may improve individualized assessments and enhancement of treatment specificity.

Reciprocal relationship among traits and environment influences

Research demonstrates that personality traits are heritable, stable over time and relatively efficient in predicting behavior (e.g. Matthews, Deary, & Whiteman, 2003; Wiggins, 2003). Given the genetic, psychobiological and environmental underpinnings of personality traits, it is argued that their phenotypic expression (characteristic adaptations) in relation to substance use depends on these inter-related patterns. The heritability of genetic tendencies appears to play a major role in the eventual expression of substance dependence (Flagel et al., 2010) and it may be manifested via individuals' personality traits and characteristic adaptations which may further interact with environment and determine the risk for the development of alcohol or drug problems (Erickson, 2007; Reiss & Neiderhiser, 2000). In line with these perspectives, it has been put forward that individual differences in personality traits affect social environment, which in turn enhances their phenotypic expression. (Rothbart, Ahadi, & Evans, 2000; Scarr & McCartney 1983).

Several developmental psychopathology and diathesis stress models (Oetting & Lynch, 2003; Verheul & van den Bink, 2000; Wachtel, 1977; Wills et al., 2000) appear to share a common standpoint that there is continuous reciprocal interaction among dispositional personality traits and environmental influences in shaping individuals vulnerability to development of substance use problems. Moreover, these conclusions are congruent with early socialization theories that support that pre-dispositional variation in behavioral disinhibition increases the risk for problematic socialization, early formation of bonds with deviant peers, drug use and conduct problems (Oetting & Lynch, 2003).

Association of personality traits with substance use

In regards to the association of broad personality domains with substance use initiation and abuse, research findings are fairly contradictor. This may be attributed to the measurements used, as many studies examined only specific broad domains of personality without taking into consideration the lower facets of each broad personality dimension and their significant overlap. For instance, conflicting findings regarding the relation of the broad domain of Extraversion with substance use initiation (Hill et al., 2000; Malouff et al., 2007) and abuse (Kornor & Nordik,2007; Sher et al., 2005) may be due to a high association with behavioural disinhibition related traits. The effects of this overlap may be traced in studies examining a combination of higher and lower order traits. As such, a study of Terracciano et al. (2008), found no association of Extraversion and drug use. However, the analysis of Extraversion on the facet-level demonstrated that there is a consistent association between high scores on Excitement-Seeking and all types of drug use. This may suggest that inconsistencies reported in the studies regarding Extraversion may be explained by the different importance given to the excitement-seeking factor (one of the aspects of impulsivity) across Extraversion measures.

Research indicates that there are two fundamental systems incorporated in all major trait theories that have been used to explain roots of diverse forms of psychopathology and appear to be linked with drug use initiation and dependence. One system is associated with avoidance behavior or behavioral inhibition, while the other is associated broadly with approach behavior or behavioral disinhibition (Slobodskaya, 2007). Several longitudinal and prospective studies have shown that behavioral disinhibition related traits and harm avoidance during childhood were associated with early onset of substance use and later development of SUD (e.g. Cloniger et al., 1988; Dawe, et al., 2004; Masse & Tremblay, 1997).

Avoidance behavior is postulated to underlie anxiety related personality traits and appears to be associated with substance use as an effort to reduce negative affect or desire to self-medicate. This system is broadly related to Behavioral Inhibition System (Gray & McNaughton, 2000), harm avoidance (Cloniger, 1988), neuroticism (McCrae & Costa, 1992), stress-reduction pathway (Verheul, 2001) and internalizing spectrum (Krueger et al., 2007). Findings regarding the association of avoidance behavior and substance use problems are somewhat inconsistent. While a number of studies report a significant negative correlation of avoidance behavior and substance use problems (e.g. Franken & Muris, 2006; Genovese & Wallace, 2007; Hundt et al., 2008), other studies do not report any significant association (e.g. Knyazev, 2004; Loxton et al., 2008; O'Connor et al., 2009).

In contrast, approach behavior reflects Gray's Behavioural Activation System (BAS), which responds to reward and non-punishment by initiating goal-directed activity (Gray & McNaughton, 2000) and appears to be associated with positive affect and the need for arousal (Comeau et al., 2004). Personality dimensions of approach behavior such as sensation/novelty seeking and impulsivity reflect collective behavioral syndromes labeled as "behavioral disinhibition" (Ball, 2005; Dawe et al., 2004). Behavioural disinhibition related traits have been associated with the broader personality domain "externalizing spectrum" (Krueger et al., 2007). Regardless of the variability of samples and the diversity of measures, studies indicate that approach behaviour related traits used under different terminology behavioral disinhibition, novelty seeking or impulsivity are consistently found to be associated to substance abuse (e.g. Franken &Muris, 2006; Genovese &Wallace, 2007; Hundt et al., 2008) and alcohol abuse (e.g. Kimbrel et al., 2007; Loxton et al., 2008). Finally, research on approach behavior distinguishes behavioral disinhibition (rash impulsiveness) from reward sensitivity as two separate systems with different neural pathways that influence drug dependence (de Wit & Richards, 2004). Thus, it can be assumed that high levels of sensation seeking may be a powerful incentive to start experimenting with alcohol or other illicit drugs, while impulsive traits may be responsible for the following loss of control and the development of dependence (Kambouropoulos & Staiger, 2007).

Association of personality traits with drop-out and relapse

Previous studies that examined the relation of broad personality domains and relapse report that low conscientiousness and Extraversion and high neuroticism tend to be

strong predictors of relapse in individuals following treatment for alcohol and substance abuse (Bottlender and Soyka 2005; Fisher, Elias & Ritz, 1998). However, a recent study by Muller et al. (2008) found no significant relation in high neuroticism and low conscientiousness in predicting relapse. Using a more rigorous methodological design than the previously mentioned studies, Muller and colleagues integrated several self-reports that capture both broad domains of personality and lower order traits. Overall, the results of this study support that patients with higher scores in psychoticism, impulsivity and novelty seeking and lower scores in persistence are at greater risk for relapse. This is consistent with previous findings regarding relapse in alcohol dependent patients (Cannon, Keefe, & Clark, 1997; Janowsky, et al., 1999; Sellman et al., 1997). These findings reflect the importance of specific cluster of personality traits related to behavioral disinhibition in predicting relapse. A recent review examining individual variables as predictors of treatment outcome, found that impulsivity and related traits may be predictors of treatment response in cocaine dependence (Poling, Kosten & Sofuoglu, 2007). This is in accordance with previous findings that indicate that personality traits such as impulsivity (e.g. McCown,1989), sensation/novelty seeking (Kravitz et al., 1999), have been associated with drop-out; while low persistence (e.g. Cannon, Keefe, & Clark, 1997) and novelty seeking (Meszaros, 1999) have been related to relapse.

Overall, the above findings indicate that the association of personality traits with drop-out and relapse may represent a reliable predictor and decode major individual vulnerabilities that hinder individuals' treatment engagement. Moreover, it could be argued that individuals who score high in specific facets of behavioural disinhibition, tend to be characterized by low impulse control, urgency and difficulty in delaying gratification, which may seriously impact treatment participation. Similarly, behavioral manifestation of other lower order traits such as increased hostility, aggression and low persistence may negatively affect individuals' interaction within treatment environment, hamper early formation of therapeutic alliance and prevent bonding with group members. In light of research findings provided in this review, it appears that there is a need to explore further the potential effects that these clusters of personality traits may have on treatment engagement. Given the pervasive importance of these personality traits in relapse and treatment drop-out, it is somewhat surprising that to date only limited efforts have been made to identify their role within treatment process. Thus, it is expected that treatment engagement indicators will vary depending on diverse clusters of clients' personality traits.

Purpose

Consistent with the current shift in research towards investigation of personality-matched interventions, this study attempts to examine the extent to which personality traits are related to certain treatment engagement indicators as their proper identification may lead to refinements in treatment interventions. The present study aims at contributing to the understanding of how behavioral disinhibition, avoidance and reward sensitivity related traits may represent potential mediators or moderators of motivation, therapeutic alliance, participation and satisfaction in substance misuse treatment.

Methodology

The research design will be based on methodological triangulation of quantitative and qualitative methods. Baseline data will be collected by using certain scales of the Addiction Severity Index (EuroAsi) and Client Motivation for Treatment Scale (CMOTS) in order to identify clients' traits, problem severity and motivation. Moreover, in order to detect and measure personality traits as possible prognostic indicators that influence treatment engagement, an integration of measurements will be utilized based on comprehensive well validated personality assessments that capture global factors and specific lower order traits. More specifically, in order to measure broad personality dimensions the revised NEO Personality Inventory [NEO-PI-R] will be used, while lower order personality traits will be assessed by using specific scales of brief self-reports. Following a certain period of treatment, Client Evaluation of Self and Treatment (CEST) will be administered (during-process), in order to measure and monitor clients' needs and performance during treatment. CEST examines clients' perception regarding satisfaction, therapeutic alliance and treatment participation. During this phase a semi-structured interview will be conducted in order to obtain clients' responses regarding their treatment experience which will be coded into several themes for the purpose of quantitative interpretation.

Research limitations

Several limitations of this study should be noted. The sample will be drawn from an inpatient substance misuse treatment which limits the ability to generalize findings across treatment settings and types of treatment. The broad nature of personality and the overlapping behavioral manifestation of certain personality traits may cause serious implications in operationalization and measurement of the variables. In order to examine lower order facets of broad personality dimensions, specific scales will be selected from different instruments, which may impact the validity of the study. Additionally, several limitations hinder causal explanations of the impact of clients' factors on treatment engagement, including the naturalistic setting, relational design and the fact that clients' pre-treatment variables involve numerous dimensions that are beyond the methodological sophistication of this study.

Originality & Practical implications

The importance of the study for the field of social work and public health is the attempt to identify treatment barriers and key ingredients underlying treatment engagement. Through integration of trait-dimensional diagnostic indicators this study will build on existing research by offering a more dynamic picture of clients' problem severity and intensity. Finally, the exploration of the potential mediating or moderating role of personality traits and treatment engagement may improve individualized assessments, identify and modify potential obstacles and enhance treatment response specificity by endorsing targeted interventions according to clients' unique needs.

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Bi-alphabetical naming in Serbian: evidence from masked priming

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Present study explored bi-alphabetical reading in Serbian, a language characterized by the interchangeable use of two alphabets (Cyrillic and Roman). Naming task with masked priming was administered to 21 subjects. Results showed that the subjects were faster to name the words written in Roman alphabet. Semantically unrelated primes did not inhibit the naming, while identity priming caused faster processing in comparison to the graphical mask baseline. Congruent alphabet code of the prime did not speed up the target's processing. In our population Cyrillic alphabet is acquired first, but Roman alphabet is used more. Consequently, our results suggest that the word naming in Serbian is principally dependent on the practice and not the acquisition order of the alphabets.

Keywords: bi-alphabetism, orthography, naming, masked priming, Cyrillic.

1. Introduction

Serbian language is one of the few languages characterized by the parallel use of two alphabets. In the case of Serbian, these two alphabets are Cyrillic and Roman. Two Serbian alphabets share many common characteristics, one of which is extreme orthographical shallowness. With the exception of the three Roman digraphs (Dž, Lj, Nj), in both alphabets a single grapheme is used to denote a single phoneme. Also, the pronunciation of a letter is not dependent on its orthographic context. Most of the graphemes are uniquely present in one of the alphabets, but seven are common to both of them (A, E, O, J, K, M, T), and another four map onto different phonemes in Cyrillic and Roman (H, P, C, B). The Cyrillic and Roman alphabets are acquired at the

first and second grade, respectively. Cyrillic is the official alphabet, whereas Roman is predominantly used. Literate adults have no difficulties reading either of the two.

Rot and Kostić (1986) and Ognjenović, Škorc and Morača (1995) investigated whether graphical (perceptual) characteristics of graphemes of the two scripts affect their identification. Their results showed that certain graphical features of the letters enhanced their identification (measured in RT), but the overall superiority of the letters of one alphabet was not established. Matching processing of the two alphabets was shown to extend to word and sentence levels, as well. For example, Lukatela and Turvey (1987) and Rot and Kostić (1988; experiment 1) found equal RTs in lexical decision in two alphabets, and the same result was obtained in word naming and sentence reading (Rot & Kostić, 1988; experiment 2).

On the other hand, several authors stressed the importance of the order of alphabet acquisition for reading. For example, Lukatela, Savić, Gligorijević, Ognjenović and Turvey (1978) made distinction between primary (firstly acquired) and secondary (secondly acquired) alphabetical memory space, and Ognjenović and Mandić (1980) reported an asymmetry in processing of the two alphabets. Ognjenović and Mandić found that their subjects errored less when reading their primary alphabet (Cyrillic) in hypoxia, even though they have been prevalently using secondary alphabet (Roman) for decades. More recently, Pašić (2004) reported that her subjects perceived common letters as primarily belonging to the (firstly acquired) Cyrillic set, and that they read Cyrillic texts faster (and with less errors of certain type) than the Roman texts. Taken together, these studies suggest that the order of the alphabet acquisition might be an important factor rendering the reading in the firstly acquired alphabet superior.

However, Feldman (1983) reported of an experiment in which subjects named phonologically unique and bivalent words (phonologically bivalent words contain common and ambiguous graphemes) and pseudowords. The results of this experiment showed that phonological bivalence slowed down the processing, with the inhibitory effect being larger in the secondary (Roman) alphabet. Yet, the described pattern of results was obtained in third grade subjects only, whereas inhibitory asymmetry across alphabets was not present in fifth graders. Feldman, therefore, stressed the importance of practice in bi-alphabetical reading, and attributed the observed change in her results to it.

In this study, our goal was to compare word naming speed and resilience to inhibitory priming in the two alphabets. By taking into account the exposure of our subjects to the two alphabets and the order of their acquisition, we aimed to identify the relative importance of those factors for reading in Serbian.

Additionally, the design of our study allowed us to verify whether the orthographic factors alone could accelerate word naming in masked priming. This possibility is of considerable theoretical value (for the discussion on the nature of priming effects see Bowers, Vigliocco, & Haan, 1998). The three previous studies which examined alphabetical priming used the long-term priming in lexical decision task (Feldman & Moskovljević, 1987; Bowers & Michita, 1998; Havelka, Bowers, & Janković, 2006). These studies failed to find the evidence of the congruent alphabet priming facilitation.

In our study, we examined the possible *immediate* effects of alphabetical/orthographic priming applying the word naming paradigm.

2. Method

Participants:

Twenty-one students of the University of Novi Sad took part in the experiment. Their native language was Serbian, and they all acquired Cyrillic alphabet firstly (in the first grade) and the Roman secondly (in the second grade).

Several types of data indicated that the subjects prevalently use Roman alphabet. (1) On the nine-point scale of the use of the alphabets (with one signifying the exclusive use of Roman and nine exclusive use of Cyrillic) subjects' mean score was 3.6. (2) A pilot survey of public inscriptions in the city of Novi Sad (subjects' place of residence) showed that out of 656 public inscriptions on the streets of central and residential districts of Novi Sad only 11.89 were printed in Cyrillic. (3) According to the media reports, 75% of the books published in Serbia are printed in Roman. (4) Only one out of more than forty textbooks used at the undergraduate psychology courses (subjects' dominant area of study) is printed in Cyrillic, (5) with Roman alphabet also persuasively prevailing on the TV, newspapers, and the Internet.

Stimuli and design

The stimuli in the experiment were 400 Serbian nouns. The nouns were 4-6 letters long (M=5.16) and their mean frequency was M=54.37 occurrences per million words, according to the Frequency dictionary of contemporary Serbian language (Kostić, 1999). One half of the nouns were uniquely readable in Cyrillic, and the other half in Roman. Each word contained at least two alphabet-unique letters, and at least one of those letters was positioned in the first half of the word.

Three factors included in the analysis were *target alphabet* (levels: Cyrillic, Roman)*, prime type* (levels: graphical mask, unrelated, identity) and *(prime-target) alphabet congruency* (levels: congruent, incongruent)*.

Experimental trials were comprised of prime-target pairs of stimuli words. Primes and targets were of equal length and closely matched in frequency. There were two experimental blocks. The Cyrillic block was comprised of the trials with Cyrillic target-words, while the trials with Roman target-words formed the Roman block. Combination of the levels of the three factors resulted in five types of primes: 1) graphical mask (######), 2) congruent identity prime - the same word as its corresponding target-word printed in the same alphabet, 3) congruent unrelated prime - prime semantically unrelated to the target printed in the same alphabet as the target, 4) incongruent identity prime - prime printed in the different alphabet than the target, and 5) incongruent unrelated prime - prime semantically unrelated to the target printed in

the different alphabet[1]. Each subject was ran in each of the ten conditions (2 blocks x 5 prime types). Examined factors, their levels and experimental conditions are presented in Appendix 1.

Procedure

We applied naming task with masked priming. Two (alphabet) blocks of 120 trials were administered in the order balanced across subjects. A trial would start with the 252ms long exposition of the graphical mask. The mask was followed by the brief (57ms) prime exposition whose presence subjects were mostly unaware of. Another graphical mask then followed the prime (for 252ms), after which the target-word was presented. Subjects were instructed to read out loud the target-words as soon as they spot them. The stimuli were shown on the 17" monitor, in white, 12pt Courier New font against dark background, by the use of DMDX software v.3.2.5.4 (Forster & Forster, 2003).

3. Results

Collected data were modeled with generalized linear mixed effects model (Baayen, Davidson, & Bates, 2008) in the lme4 package (Bates, Maechler, & Dai, 2009) of *R* system for statistical computing (v2.8.1, R Development Core Team, 2009).
    The contribution of alphabet and type of priming on naming latencies was evaluated with Model 1. It included *target alphabet* and *prime type* as fixed factors, and subjects and stimuli as random factors. Dependent variable was logarithmically transformed reaction times. Mean reaction times of fixed factor levels were: $M_{Cyrillic}$=610.0143ms, M_{Roman}=585.8583ms, $M_{GraphicalMask}$=607.865ms, $M_{Identity}$=573.1009ms, $M_{Unrelated}$=612.674ms. Fixed factor results are presented in Table 1.

Table 1: Target alphabet and prime type effects of Model 1

	Estimate	Std. Error	t value	Pr(>|t|)[2]
Intercept (Cyrillic, Graphical mask)	6.421417	0.030691	209.23	0.0000
Alphabet: Roman	-0.041627	0.007291	-5.71	0.0000

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[1]   Unrelatedness of the prime-target pairs was determined in the pilot study in which seven subjects assessed the relatedness of word pairs on seven-point scale. The pairs with the mean scores lower than two were selected for the experiment.

[2]   p-value assessments based on Markov Chain Monte Carlo simulation with 10.000 iterations.

Prime: Identity	-0.058252	0.008932	-6.52	0.0000
Prime: Unrelated	0.007709	0.008927	0.86	0.3879

Both Roman alphabet and identity priming significantly increased the speed of processing: Roman primes by 24.03ms, and identity primes by 34.764ms and 39.262, as compared to graphical mask and unrelated primes, respectively. The processing times for the unrelated primes condition matched those of the graphical mask. There was no interaction among the factors. Model critique[3] justified the inclusion of random factors to the model, as their additions improved the model significantly (Stimuli: χ^2=337.87, df=1, p<0.001. Subject: χ^2=3193.9, df=1, p<0.001).

In Model 2, (prime-target) alphabet congruency was added to the fixed factors of the first model. Because the alphabet congruency is nonexistent for the graphical mask primes, prime type factor in Model 2 was included at two levels: identity and unrelated primes. Mean reaction times of priming conditions were: $M_{Cyrillic}$=604.769ms, M_{Roman}=582.3623ms, $M_{Identity}$=573.7784ms, $M_{Unrelated}$=613.1626ms, $M_{Congruent}$=588.4178ms, $M_{Incongruent}$=598.6264ms. The fixed effects from Model 1 were confirmed both in sign and magnitude (Table 2).

Table 2: Target alphabet prime type and alphabet congruency effects of Model 2

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept (Cyrillic, Identity, Congruent)	6.353803	0.032255	196.99	0.0000
Alphabet: Roman	-0.040037	0.009622	-4.16	0.0000
Prime: Unrelated	0.066107	0.009622	6.87	0.0000
Incongruent	0.017795	0.009622	1.85	0.0645

Roman targets were named 22.407ms faster than the Cyrillic, and identity primes facilitated 39.384ms faster processing than the unrelated priming condition. Crucially, alphabet congruency factor did not reach the significance level. Interactions among the

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3   Model critique is a way of assessing whether random factors should be included in mixed effects model. Models with and without random factors are compared in order to check whether the former gives better prediction than the latter.

factors were nonsignificant, and the model was improved by the inclusion of random factor subjects (χ^2=2213.6, *df*=1, *p*<0.001) and stimuli (χ^2=288.78, *df*=1, *p*<0.001).

4. Discussion

Principal finding of our study is unequal naming speed for the words presented in the two alphabets. Words written in the Roman alphabet were named faster. Given the substantial prevalence of Roman in the subjects' environment, this finding conflicts with the view of Pašić (2004) according to which practice factors are not important for the reading of the Serbian alphabets. On the other hand, the result is compatible with the notion of Feldman (1983) that the effects of the order of acquisition are temporary developmental phenomenon that is overridden by the practice factors in adults. Even though all of our subjects acquired the Cyrillic script firstly and the Roman secondly, their reading of the latter was significantly faster. Because previous studies failed to find graphical superiority of the letters of either alphabet, and because the direction of the effect is opposite to what the order of acquisition hypothesis would predict, it is our view that the result should be attributed to the subjects' prevalent exposure to the Roman alphabet. In support of this, we note that Roman script prevalence in the subjects' environment is convincingly illustrated by different types of data such as subjects' self-assessment, public sign survey, script proportions of academic textbooks and books in general, printed media, TV and the Internet. Therefore, we argue that the practice/exposition factors, unlike the order of alphabet acquisition, influence the word naming speed in Serbian.

We now turn to the issue of priming/inhibition. Results of the experiment show that unrelated word priming did not inhibit target processing (in comparison to the graphical mask baseline), whereas identity priming facilitated the processing. The size of this effect was somewhat larger than in the study of Masson and Isaak (1999) where slightly shorter prime exposition had been used. Accepting the argument of Masson and Isaak that masked identity priming effects are of prelexical origin, we interpreted the established identity prime facilitation in the same fashion. Interestingly however, identity priming facilitation proved not to interact with the prime-target alphabetical congruency: the identity primes printed in the alphabet different than the targets facilitated the processing to the same extent as the identity primes that matched the targets in the alphabet code. This finding shows that the observed prelexical identity priming effects are of the phonological, and not the orthographical origin.

The third finding of the experiment is that the effect of the prime-target alphabet congruency did not reach significance, even though the alphabetically congruent primes resulted in the slightly shorter RTs. Evidently, the sole alphabetical matching of the primes with the targets was not sufficient to produce the faster word naming. Our result obtained in naming with masked priming is in line with the results of lexical decision long-term priming experiments (Feldman & Moskovljević, 1987; Bowers & Michita, 1998; Havelka, Bowers, & Janković, 2006). It presents additional argument for the conclusion on the phonological, and not the orthographical, nature of the observed identity priming effects.

Finally, we found no interactions between alphabet and prime type or alphabet and prime-target alphabet congruency. While it is possible that different/stronger types of inhibitors (such as those used in Ognjenović and Mandić, 1980) might cause differential effects across alphabets, we conclude that our results do not support the notion of superior inhibitory resilience of the firstly acquired alphabet. Similar patterns of priming effects across alphabets can be taken as additional argument against the importance of the order of alphabet acquisition for reading in Serbian.

In conclusion, our study showed that naming of single words printed in Roman script was faster, and that the examined types of primes produced similar patterns of results across alphabets. Given the fact that the Cyrillic alphabet is the firstly acquired one, and that the Roman is more often used in the Serbian society, we hold that the alphabet exposition/practice, and not the order of acquisition, is the factor predictive of the reading speed in Serbian.

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Appendix 1: Ten experimental conditions obtained by the combination of two blocks and five prime types

Condition	Target alphabet	Prime type	Alphabet congruency	Number of trials
1		Identity	*Nonexistent*	40
2		Unrelated	Congruent	20
3	Cyrillic	Identity		20
4		Unrelated	Incongruent	20
5		Graphical mask		20
6		Identity	*Nonexistent*	40
7		Unrelated	Congruent	20
8	Roman	Identity		20
9		Unrelated	Incongruent	20
10		Graphical mask		20

Interdisciplinary approach to teaching music/visual art as a special need of talented students

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The aim of this paper is to point need interdisciplinary approach to planning, organization and realization of the teaching process of music and visual art, expecially for gifted children. The aim of the research is to determine differences in the emotional experience related to a music composition between gifted pupils and other children aged 10-11. The analysis of students' works has been done in compliance with seven independent criteria. The level of differentiation has individually been determined for each student between the visual art elements used in two works. The research showed that in relation to each parameter musically talented students demonstrated higher level of expressing the differences they experienced while listening to the two music compositions. The place of visual art values in wich talented have better results showing spontaneous expression of the emotional experience confirm that the conscious deciding and cognitive activity of these students above the emotional and spontaneous level. The differences referring to conscious,intellectual understanding and planned actions have no statistical importance .Conclusion is about the potential lying in the talented children and conditions for their creative needs and further advancement.

Keywords: children with special needs, talent, emotional expression, children's art work

1. Introduction
Definitions

Teaching music and visual art in lower grades of primary school is, because of its artistic character as well as of students' age, very specific and thus it demands a creative and interdisciplinary approach to planning, organization and realization of the teaching process.

Specific character of teaching music art refers to the artistic character of the teaching contents, since music, being a temporal art, deserves students' full attention , higher level of concentration and more developed memory then it is needed in teaching other school subjects, and the principle of obviousness is realized not only through visual perception but also through audio perception of a sound-tone. A music teacher in lower grades has also got a very delicate task to get a thorough knowledge of students' music abilities which are very heterogeneous, to follow and to develop them , as well as the grading procedure which does not comprise evaluation of musical abilities.

Although there is a certain difference in defining music abilities, which is studied by music pedagogues and psychologists , and various terms with synonymous meanings can be found in literature, we will further use the term (musical) talent–**talented students** for innate musical abilities which can be developed without being stimulated by the surroundings and which are characteristic for the field of musical performance, or **the students attending music school.**

On the other hand, teaching visual art is specific because acquisition of all visual art ideas is realized almost completely through children's visual creative work. Teaching process has to be planned so that the results which are more spontaneously produced by the children having talent for visual art are not experienced by other students as an advantage or quality equally included in assessment of all works. The level of contents acquired and realized through children's works should be evaluated alongside recognition of talent but also without inclusion of the values originating from talent. Since visual art is inherently spatial, the results mentioned at the beginning , when the assigned visual problem has not been completely studied, remain in the children's drawing or painting till the end. That is why the teacher has to plan and grade precisely the tasks within the time structure of the lesson in order to avoid to a maximal extent the so called work " defects" in students' experience.

Taking into account all special features of lesson articulation and variety of contents requiring application of different methods, procedures and methods of work, besides accomplishing the aims, it is necessary to provide completeness and logical rounding off of a visual art/music lesson.

The need to stimulate students' creative and unrestricted expression in music lessons is shared by all students , meaning that it is demonstrated apart from the achieved level of development of musical abilities. Such need is conditioned by definition of the main goal of the subject in lower grades , and that is emotional and aesthetic experience of a music work which is individual for each student. Although one of the principles

indispensable for successful teaching is respecting individual characteristics of students, in practice the respect for individual differences is not carried out consistently. In this way, talented students are somehow neglected and their further education is left to lessons of instruments, the teaching of singing and music theory in music schools. The contents of some fields of work , such as listening to music and children's creative work realized only at primary school need to be adjusted to all students , respecting individual differences in development level of their musical abilities. One form of children's creative work, which will be the subject of this research, can be applied in teaching visual art and music. Thus we want to emphasize the possibility of interdisciplinary approach in realization of these subjects, and such an approach a huge amount of **special needs of talented students** is accomplished.

Talented students should be additionally motivated by application of up-to-date forms of teaching. Also, besides new forms and methods of work, it is necessary to make various combinations when applying them because of all characteristics of teaching music and visual art and heterogeneous musical abilities of the students in a class.

In order to avoid motivation decline in talented students on account of contents they are already familiar with, additional engagement of students is essential, and that is achievable by applying various forms of interactive learning and interdisciplinary approach to realization of teaching music and visual art. Modern forms of teaching organization in teaching music mean a creative approach when choosing and realizing programme contents. In the first place it refers to the choice of compositions which are listened to in the class, since music literature is an inexhaustible source of possibilities to provoke and intensify emotional and aesthetic experience of a music work which is individual for each student in the sense of experience itself , as well as expression of the experience mentioned. A lot of students will express their individual experience of music most naturally by visual art means. In that case it is especially important to extend the range of compositions from the field of vocal and programmed (instrumental) music to other fields as well.

2. Research methodology framework

Research subject is visual interpretation of a music work and interlinking music and visual art elements as a need of the musically talented students.

Research aim is researching the abilities to recognize expressive characteristics of a music work and their visual interpretation (musically) talented students.
In reference to the set research subject and aim we have defined the following tasks:
- to investigate if there are differences in visual interpretation of a music work between students attending music school and other students
- to research the segment of visual expression in which **talented students** have expressed with more emphasis the character of a music composition
- to research if **other students** have expressed with more emphasis the character of a music composition in some segment of their visual interpretation
- to examine the extent to which talented students differ from other students in particular segments of visual expression of music composition

- The basic presumption of this research is that the students attending music schools have higher achievements i.e. higher level of differentiating experiencing music compositions in comparison to the students not attending music schools. As we have already explained, one of the features of a successful visual art lesson is evaluation of children's works without emphasizing the values achieved thanks to visual art talent , as well as assessment of creative and artistic quality of these works was not the research task .

Research specimen is intentional and it consists of two classes of fourth grade students of the town's central primary school, a total of 55, 14 of which have been attending music school (for two years).
The instrument is not standard , it has specially been designed for the needs of this research. The tests consists of :

- Preparatory part where we have applied the method of recognition of pictures which would by their visual features correspond to the characteristics of the composition which is being listened to ;
- Listening to two compositions of a different pace, performance composition, musical style and form , and visual representation of those compositions in two works after a repeated listening to both of them. For this particular reason we have chosen these two compositions : **Dreaming** by Robert Schuman and **The march** by W.A. Mozart. Children's creative potential is identified through children's free expressiveness, so that they did not have a concrete visual art theme. Students decided by themselves which visual elements they would use to depict the pace, dynamics, character of the composition, instrument's colour. Although the same tasks to depict spontaneously the experience were set for all students, it was assumed that talented students can determine more complex elements of the music expression, and to notice and explain the connection between visual art and music expression elements when analyzing visual art works. The variants and possibilities of conveying musical to visual art elements had not been previously analyzed with the students.

The analysis of students' works has been done in compliance with seven independent criteria in order to avoid the effects of generalization and conveying the impression and experience of one visual value to the whole work. These criteria basically have clearly defined visual art values whose gradation can objectively be valued. The level of differentiation has individually been determined for each student between the visual art elements used in two works. They are the following values:
A – surface saturation
B- composition type
C-colour (hue)
D- value (quantity of light)
E- type of lines
F-intensity of lines
G-relation between the lines and surfaces

Differentiating level between these elements in the first and the second work is represented by grades from 1 to 5, where grade 1 means that there are no differences in the usage of the given element , and grade 5 refers to the biggest differences.

3. Research results interpretation

Table 1 DESCRIPTIVE STATISTICS

	Does the student attend a music school?	N	Mean	Std. Deviation
Surface saturation	No	41	2.0000	1.32288
	Yes	14	3.6429	1.27745
Composition type	No	41	2.0488	1.44830
	Yes	14	2.7143	1.68379
Colour (hue)	No	41	2.3902	1.22225
	Yes	14	3.5714	1.01635
Value	No	41	1.3659	.82934
	Yes	14	2.7857	1.18831
Type of lines	No	41	2.7561	1.52939
	Yes	14	3.3571	1.64584
Intensity of lines	No	41	1.5610	.94997
	Yes	14	3.3571	1.54955
Relation between the lines and surfaces	No	41	2.1220	1.59992
	Yes	14	2.7143	1.38278
Total	No	41	14.2439	5.82143
	Yes	14	22.1429	5.33288

Table 2 .Tests of normal distribution (Tests of Normality)

	Does the student attend a music school?	Shapiro-Wilk		
		Statistic	df	Sig.
Surface saturation	No	0.755	41	0.000
	Yes	.879	14	0.056
Composition type	No	.717	41	.000
	Yes	.814	14	.007
Colour (hue)	No	.880	41	.000
	Yes	.854	14	.025
Value	No	.512	41	.000
	Yes	.867	14	.038
Type of lines	No	.842	41	.000
	Yes	.804	14	.006
Relation between the lines and surfaces	No	.639	41	.000
	Yes	.849	14	.022
Relation between the lines and surfaces	No	.685	41	.000
	Yes	.906	14	.140
Total	No	.897	41	.001
	Yes	.944	14	.470

Since normal distribution is one of the basic conditions which has to be satisfied when applying t-tests (Sig. Has to be more than 0.05) in our case it is not possible to apply this parametric procedure because it is obvious from the table that data in groups of students for individual elements (does a student attend or not a music school) do not satisfy this condition . That is why Mann-Whitney test is used (non-parametric procedure as a supplement and a prototype of a t-test).

Table 3. THE RESULTS of a Mann-Whitney test

	Mann-Whitney U	Asymp. Sig. (2-tailed)
Surface saturation	111.000	.000
Composition type	219.000	.158
Colour (hue)	130.500	.002
Value	76.000	.000
Type of lines	228.000	.240
Intensity of lines	107.000	.000
Relation between the lines and surfaces	202.000	.077
Total	86.500	.000

The research showed that in relation to each parameter musically talented students demonstrated higher level of expressing the differences they experienced while listening to the two music compositions. Thus, the overall result points out to their more distinct ability to depict their experience and it is significant in means of statistics (table 1).

When observing musically talented students, according to the experience of a music composition they expressed, the first place is taken by composition saturation (3.64), and the other values are ranked in the following way : intensity of lines (3.35), type of lines (3.35), colour (3.27), value (2.78), relation between the lines and surfaces (2.71) and composition type (2.71). The three visual art components at the top of the list , according to their prominent values, emphasize more directly than the other visual art elements to the general sensibility , temper , subtle feeling for texture and tactile sensations. These personality traits are at the same time a source and index of innate musical abilities.

When observing other students , according to the experience of a music composition they expressed, the first place is taken by type of lines (2.75) and the other values are ranked in the following way : colour (hue) (2.39), relations between the lines and surfaces (2.12), composition types (2.04), composition saturation (2.00), intensity of lines (1. 56) and value (1.36) . Differentiation of the top values is more than other listed values a product of a conscious activity and intentional deciding. Using different type of lines , using different colours and establishing a different relation between the line and the surface is reflection of students mental activities . Also, the place of visual art values showing spontaneous expression of the emotional experience (composition satiation, intensity of lines and quantity of light) confirm that the conscious deciding and cognitive activity of these students above the emotional and spontaneous level.

Analysing the differences between talented and other students in each segment of visual expression of music composition, we can come to a conclusion that we have a statistically significant difference for the values pointing out to emotional and spontaneous expression of experience. (intensity of lines, value, composition satiation, colour (hue)). Considering other elements, the differences referring to conscious, intellectual understanding and planned actions (composition type, relation between the lines and surfaces , type of lines) have no statistical importance   (table 3).

4. Conclusion

Societies aware of the potential lying in the talented children , provide conditions favourable for their development. Their creative needs are analyzed and they are provided with conditions useful for their realization, development and further advancement. Talented students have a higher creativity level on average in comparison to the rest of the population and stimulating and satisfying the motives found in creative individuals are basic, and in our opinion, their most important needs.

The need to demonstrate and develop curiosity which is one of the most important features of creativity is recognized as sensitivity to the new , inquisitiveness and finding problems where the untalented don't see them. The need to explore the outside world when the purpose of such a quest cannot be guaranteed in advance is the thing in an individual recognized as curiosity. This urge in the talented is stronger than the need for security, and the adventure of a creative approach is more appealing than the safety of the secure road. Unconventional approach to solving musical expression by means of visual art, the combination and searching the ways of conveying one medium to the other is the opportunity to satisfy and develop that need of theirs.

The need for a complex approach to problems in the talented is reflected in abilities developed above average, the abilities of **creative generalization and creative differentiation.** This method of simultaneous organization of visual and music activities is gives a maximum opportunity to realize the abilities of connecting and joining remote facts in an entirety, which, according to the expected order, aren't usually connected. Iterdisciplinary approach provides talented students with a possibility to realize and develop their abilities to synthesize the acquired knowledge , notions and ideas in a creative way. Also, in this way the deductive thinking abilities are emphasized , analytical disassembling within a selected art which is more developed in musically talented children.

The need of the talented to enjoy creative work is, by means of such approach to planning and performing teaching of artistic subjects, realized through *a* **flow experience** and **realization of hedonistic motives.**

Non-conformist features of such organization of teaching is something which all children find pleasant and especially the talented ones, because they find in this a confirmation and support of their own **non-conformist approach** which is emphasized when **solving problems in general.**

The flow is a state of mind when a person completely surrenders to the subject he/she is currently dealing with, when there is a feeling of maximum focusing of energy, total surrender and the success expecting at the end of activities (Csikszentmihalyi, 1990). Using the combination of music and visual art activities it is possible to achieve the high level of concentration, loosing the touch with the time (it passes imperceptibly), the feeling of self-consciousness is switched off, direct and instantaneous reaction to stimulation is emphasized to the maximum. The experience of balance is present between the possibility and challenge (each visual art work is adequately conveyed experience, there are no wrong solutions), the activity is rewarding by itself, work products are certain and obvious , the sense of self-realization does not depend on the outside assessors. In such activities, a strong experience is characteristic for the flow, the so called " taken by the stream" experience. At the moment when a teacher recognize a total surrendering of his students to the activity in the lesson and when he sees that they are enjoying to the full , he gets a feeling of success.

We cannot neglect effects of motivation achieved by satisfying hedonistic motives (physical, emotional and intellectual) which are more distinct in talented children. Physical aspects of realization of hedonistic principles is realized by this approach through simultaneous activation of visual, audio and tactile senses. Each of these senses, individually activated, is a powerful stimulating means in teaching , but this simultaneous experience gives a high level of satisfying the need of the talented children to enjoy creative work.

Self-realization is placed at the highest level in the hierarchy of human needs (Maslow, 1970) , and that is why the powerful effects are motivation which was planned by realization of that motive. The motive of self-realization is the most prominent in individuals possessing creative potentials. This is a very complex motive and it consists of several social and ego motives such as aspiration to distinguish oneself , to get self-confirmation , self-respect, the need for independence , the need for solitude and privacy , the need for social reputation. All these aspects of the motive to realize self-realization are activated to the maximum in talented children by application of an interdisciplinary approach.

Developing such an approach to teaching artistic subjects provides conditions for realization of numerous needs of talented students. Being aware of the importance that the talented have for the future, obliges us to modernize and adjust teaching music and visual art to individual students' abilities and to stimulate continually creative thinking in teaching artistic subjects , as well as emotional expression and inner motivation for further activities, creative activities and independent research.

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Appendix 1. Examples of students' works with the analysis of visual values.

M

student	A	B	C	D	E	F	G	Σ
6	4	5	5	3	5	5	3	30

student	A	B	C	D	E	F	G	Σ
7	4	1	2	5	2	2	1	17

student	A	B	C	D	E	F	G	Σ
8	1	3	4	2	5	4	2	21

student	A	B	C	D	E	F	G	Σ
11	3	5	4	1	5	1	5	24

student	A	B	C	D	E	F	G	Σ
16	1	3	1	1	2	2	3	13

student	A	B	C	D	E	F	G	Σ
18	1	1	2	1	1	1	1	8

M

student	A	B	C	D	E	F	G	Σ
31	2	2	3	1	1	4	2	15

student	A	B	C	D	E	F	G	Σ
36	4	3	3	2	3	1	4	20

student	A	B	C	D	E	F	G	Σ
47	5	5	4	3	5	5	5	32

student	A	B	C	D	E	F	G	Σ
48	1	2	4	1	2	1	1	12

student	A	B	C	D	E	F	G	Σ
51	5	5	5	1	2	1	5	24

student	A	B	C	D	E	F	G	Σ
52	4	3	1	2	5	3	4	22

student	A	B	C	D	E	F	G	Σ
54	1	1	1	1	5	1	1	11

M student attending music school

Normative Influences in Adolescent Smoking

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Previous research has found that various factors are linked to smoking in youth; however, social normative influence is suggested to be the most important one. In a survey conducted in three Bulgarian schools, 492 adolescents aged 12-16 reported high exposure to smoking in the family, in school premises, and in indoor leisure venues. On the basis of these results, a second study investigated the relationship between normative beliefs and several proximal cognitive antecedents of behaviour: behavioural intentions and willingness to smoke in non-smoking adolescents. On the basis of the distinction between intentions and willingness, subjective norms (or beliefs how significant others are perceived to think) are expected to be better predictors of behavioural intentions than descriptive norms (i.e., the perceived behaviour of others). On the other hand, the link between descriptive norms and behavioural willingness is hypothesized to be stronger than that of subjective norms. A sample of 750 adolescents aged 14 to 18 completed an anonymous questionnaire. The results confirmed partly the hypotheses: descriptive norms predicted significantly the willingness to smoke and subjective norms did not; however, both descriptive and subjective norms predicted intentions. Limitations include the use of self-report measures and the cross-sectional survey design.

Key-words: youth smoking, social norms, dual-processing

1. Introduction

Smoking is the major preventable cause of death in world (World Health Organization [WHO], 2008). The majority of smokers start smoking in their adolescence (U.S.

Department of Health and Human Services [USDHHS], 1994). The context of this research: Bulgaria is among the European countries with the highest smoking rates in adults (39%, European Commission [EC], 2009) and adolescents (20%, Manolova, 2006). A previous study on the factors related to smoking initiation in Bulgarian adolescents found that risk beliefs and attitudes towards smoking but not normative social factors are related to smoking initiation in Bulgarian youth (Anatchkova, Redding, & Rossi, 2006). These results are in contrast with previous research indicating that, among the various factors linked to youth smoking, social/normative influences are vital (e.g., Tyas & Pederson, 1998).

Normative factors constitute a form of social influence (Cialdini, Reno, & Kalgren, 1990). According to the Theory of Planned Behaviour (TPB, Ajzen, 1988) – one of the most prominent models in health psychology – beliefs whether significant others approve or disapprove of certain behaviour (i.e., *subjective norms*) are the main normative influence on behaviour enacted through behavioural intentions. However, subjective norms were found to explain little share of the variance in intentions to smoke. Thus, other more subtle normative processes are suggested to play more important role in adolescent smoking (cf., Tyas & Pederson, 1998). These might include *descriptive norms* – beliefs about the prevalence of a particular behaviour. Research, not only on smoking but generally on adolescent unhealthy behaviours, has found that adolescents overestimate the actual prevalence of 'users,' and that actual 'users' overestimate the prevalence of 'users' compared to 'non-users' (e.g., Sussman, Dent, Mestel-Rauch, & Johnson, 1988). Most importantly, in studies applying extended versions of the TPB, descriptive norms added significantly to the share of explained variance in behavioural intentions and behaviour itself (Rivis & Sheeran, 2003).

A preliminary study with 492 pupils aged 12 to 16 from three schools in Sofia that explored reported social norms regarding smoking found high smoking rates (20% regular smokers), with larger proportions of smoking students being female. Moreover, students reported high exposure to smoking in the family, in public places and in school premises. Further, participants reported that more than 60% of their mothers and fathers were smokers, although the majority of the students (> 90%) perceived their parents as opposing smoking. Moreover, in the non-smoking participants, social (descriptive norms) and contextual (situational temptation) factors significantly contributed to the variance in the intentions to start smoking – a result at odds with the findings reported by Anatchkova et al. (2006). However, subjective norms were not a significant predictor of intentions.

The present study

The present research builds on these findings and addresses several limitations of the preliminary research, including the use of single items and the narrowness of the intention and subjective norms constructs. This study expands the postulates of the TPB and addresses the theoretical framework of the Prototypes Willingness Model (PWM, Gibbons, Houlihan, & Gerrard, 2009). PWM postulates a dual-mode processing of adolescent unhealthy behaviour, with reasoned and reactive paths. The reasoned route represents a long tradition in the study of the adolescent unhealthy

behaviours, as represented in the TPB. According to this path, adolescents start smoking because they develop behavioural intentions to start smoking on the basis of a number of relevant factors (e.g., attitudes and subjective norms). However, it is highly questionable whether intentions defined as future plans to enact actions reflect the whole picture of adolescent unhealthy behaviour, because unhealthy behaviour in youth seems to be spontaneous and not preplanned (Reyna & Farley, 2006). Therefore, a second path reflecting behaviour as an unreasoned social reaction seems to be more relevant in the study of adolescent unhealthy behaviours. This path is hypothesised to be enacted through behavioural willingness. Intention and willingness are highly correlated, but distinct constructs (Gibbons & Gerrard, 1995). While behavioural intention reflects general plans for enactment of behaviour, behavioural willingness captures the openness to perform behaviour in specific contexts when an opportunity presents itself (Gibbons & Gerrard, 1995). Indeed, behavioural willingness has been shown to be a better predictor of adolescent unhealthy behaviour than behavioural intentions (e.g., Gibbons, Gerrard, Blanton, & Russel, 1998).

Further, Gibbons et al. (2009) suggested that subjective norms, as part of the reasoned path, are expected to be better predictors of behavioural intentions than descriptive norms. On the other hand, the link between descriptive norms and behavioural willingness is hypothesised to be stronger than that of subjective norms. In accordance to this, Ohtomo and Hirose (2007) found that descriptive norms were more predictive for the reactive path of eco-friendly behaviour, while subjective norms were more predictive for the intentional route. No research so far examined this in smoking behaviour. Hence, the present study aimed to examine whether the two paths – determined by the two outcome variables behavioural intentions and behavioural willingness – have distinctive normative predictors. It was expected that subjective norms will be better predictors of intentions than descriptive norms, and that descriptive norms will be better predictors of willingness than subjective norms. In addition, differences between smokers and non-smokers regarding reported normative beliefs were explored. It was expected that smoking adolescents will report more favourable of smoking subjective norms and higher descriptive norms than non-smoking adolescents.

2. Method

Measures

A battery of measures reflecting descriptive and subjective norms, and intentions/willingness to smoke in social situations included items adopted from prominent research on adolescent smoking (e.g., Gibbons, Helweg-Larsen, & Gerrard, 1995; Moan & Rise, 2006)

Subjective norms were assessed via three questions. Students were asked about their beliefs of significant others' approval of participants smoking. The 'significant others' in the wording of the item differed in terms of their age: 1) peers, 2) young people who graduated from school (18-25 years old), and 3) adults (over 25 years old). The response options ranged from 1 (*disapproval*) to 7 (*approval*). The internal consistency of the three items was high, Cronbach's α = .86, M = 5.23, SD = 1.72.

Descriptive norms were assessed via a number of questions. Reported frequency of smoking in public places was captured with three items asking about the perceived frequency of smoking of the same groups of people used in subjective norms items. The internal consistency was acceptable, Cronbach's $\alpha = .63$, $M = 4.30$, $SD = 0.65$. An additional question asked about the observed frequency of smoking at home. Response options of these four items ranged from 1 (*never*) to 5 (*almost always*).

Number of closest friends smoking was assessed with the item "Out of your five closest friends, how many are smokers?" Response options ranged from 0 to 5 (friends smoking).

Estimated prevalence of smoking was assessed with three open-ended questions asking about the rate of smoking in the same three groups of people applied in the subjective norms measure. The internal consistency of these three items was high, Cronbach's $\alpha = .83$, $M = 69.78$, $SD = 15.99$.

The four items assessing behavioral intentions asked: "Do you [intend/plan] to smoke in the following [one/five] year(s)?" Response options ranged from 1 (*definitely no*) to 7 (*definitely yes*). The internal consistency was very high, Cronbach's $\alpha = .94$, $M = 2.36$, $SD = 0.35$).

Measures on behavioural willingness asked participants to imagine three situations and to respond how willing they are to smoke in them. Response options ranged from 1 (*very willing*) to 7 (*very unwilling*). The internal consistency was very high, Cronbach's $\alpha = .94$. $M = 3.01$, $SD = 2.08$.

Demographics included age, grade, and gender. Smoking status was assessed using five self-report categories: 1) never-smokers (students who reported never tried smoking); 2) triers (i.e., students who reported they only tried smoking but not more than five times; 3) students who are smoking occasionally (several cigarettes per week, but not daily); 4) students who smoke daily; and 5) ex-smokers (students who used to smoke regularly in the past but have given up). For the sake of simplicity, the sample was divided into two groups: never-smokers and ever-smokers (all except never-smokers, i.e. category 1).

Sample and Procedure

A sample of 790 adolescents from the 8th until the 12th grade (usually 14 to 18 years old) in five Bulgarian schools completed the questionnaire. The data collection occurred in May/April 2010. The procedure was reviewed and approved by the Ethics Committee of the Psychology Department at CITY College.

Female students ($n = 465$, 59.3%) represented a slightly larger proportion of the sample than male students ($n = 319$, 40.7%). Students were equally divided in the five grades with the only exception of the last 12th grade where fewer students were available at school.

Regarding smoking status, 28.7% of the sample reported never tried smoking, 34.0% reported tried smoking but fewer than five times, 11.7% were the self-identified smokers, 22.5% self-identified as regular smokers, and 3.1% were the ex-smokers. Ever-smokers represented then 71.3% of the sample. In accordance with the preliminary study, significantly larger proportions of ever-smokers were female students, and slightly more never-smokers reported male gender, $\chi^2(1) = 20.66$, $p <$ .001. Regarding grade, in the 8th grade ever-smokers outnumbered never-smokers to a lesser extent than in the higher grades. From the 9th grade until the 12th grade the ratio of never- to ever-smokers remained more or less the same.

3. Results

Differences between ever-and never-smokers

As expected, never-smokers reported significantly higher perceived disapproval of smoking in their significant others than never-smokers (see Table 1). Further, never-smokers scored significantly lower on every measure of descriptive norms than ever-smokers. Finally, never-smokers reported significantly lower intentions and willingness to smoke.

Table 1
Differences between Never- and Ever-Smokers in Normative Beliefs, Intentions and Willingness.

	Never-smokers		Ever-smokers			
	M	*SD*	*M*	*SD*	*t(df)*	η^2
Subjective norms	5.49*	1.79	5.12	1.68	$t(788) = 2.69$	.009
Smoking home	2.74	1.59	3.32**	1.58	$t(786) = -4.46$	.025
Smoking public places	4.02	0.71	4.41**	0.58	$t(788) = -7.80$	.072
Estimated smoking rate	65.91	16.67	71.32**	15.46	$t(785) = -4.32$	.023
Best friends smoking	1.18	1.37	2.68**	1.74	$t(785) = -11.49$	.144
Intentions to smoke	1.32	0.66	2.77**	1.47	$t(788) = -14.29$	.206

| Willingness to smoke | 1.32 | 0.74 | 3.68** | 2.06 | $t(788) = -16.69$ | .261 |

Predictors of intentions and willingness

To examine whether the intentions and willingness to smoke are predicted by different normative beliefs stepwise multiple regressions were calculated with the three variables of interest as dependent variables. Only never-smokers and triers were included in these analyses.

Intentions and willingness were highly related to each other (see Table 2). Both were associated significantly and positively with gender (girls giving higher intentions and willingness than boys), with the observed smoking at home, with the number of best friends smoking, and with smoking in public places. Subjective norms were significantly positively associated only with intentions and not with willingness, but estimated smoking rates were associated significantly only with intentions.

Table 2
Intercorrelations Between Intentions, Willingness to Smoke, Descriptive, and Normative Variables.

	1	2	3	4	5	6	7	8
1. Intentions	-							
2. Willingness	.68**	-						
3. Smoking status[1]	.31**	.40**	-					
4. Gender[2]	.17**	.14**	.15**	-				
5. Grade	.02	-.01	.10*	.06	-			
6. Subjective norms	-.14**	-.04	-.01	.04	.01	-		
7. Smoking at home	.13**	.10*	.10*	.08	-.01	-.07	-	
8. Smoking rates	.09*	.03	.12**	.20**	.14**	-.04	.17**	
9. Best friends smoking	.19**	.16**	.14**	.09*	.13**	-.13**	.07	.23**
11. Smoking public places	.10*	.08*	.21**	.03	.22**	-.06	.06	.30**

Note. [1] Smoking status dummy: 0 = Never-smoker, 1 = Triers; [2] Gender dummy: 0 = Boys, 1 = Girls; * $p < .05$, ** $p < .01$.

On the first step of the regression, the dependent variables gender, grade, and smoking status were added. On the second step, subjective norms followed. Third, the descriptive norms were added to the model. On the fourth step, the estimated rates of smoking were added. The final models were significant and explained 16.2% of the variance in intentions and 19.1% of the variance in willingness. On the final steps of

both models, smoking status was a significant predictor with triers reporting higher intentions and willingness to smoke than never-smokers. Gender was significant predictor only of intentions and marginally significant predictor of willingness ($p < .10$) with female students reporting higher intentions. Subjective norms were significant predictor of intentions, but not of willingness. Regarding intentions, subjective norms were slightly better predictor than best friends smoking. Regarding the prediction of willingness, only best friends smoking of the normative measures was associated with the dependent variable.

Table 3

Hierarchical Multiple Regressions of Intentions and Willingness onto Descriptive and Normative Variables.

		Intentions	Willingness
1	Grade	-.01	-.055
	Gender[1]	.13**	.08*
	Smoking status[2]	.29***	.39***
	R^2	.117	.173
2	Grade	-.01	-.05
	Gender[1]	.13**	.08*
	Smoking status[2]	.29***	.39***
	Subjective norms	-.14**	-.04
	R^2	.137	.176
3	Grade	-.03	-.07
	Gender[1]	.12**	.07
	Smoking status[2]	.26***	.37***
	Subjective norms	-.12**	-.02
	Smoking at home	.07	.04
	Best friends smoking	.10*	.10*
	Peers smoking public places	.06	.04
	R^2	.162	.189
4	Grade	-.03	-.06
	Gender[1]	.12**	.08
	Smoking status[2]	.26**	.37***
	Subjective norms	-.12*	-.02
	Smoking at home	.07	.05
	Best friends smoking	.11*	.10*
	Peers smoking public places	.07	.05
	Smoking rates	-.01	-.05
	R^2	.162	.191

Note. [1] Smoking status dummy: 0 = Never-smoker, 1 = Triers; [2] Gender dummy: 0 = Boys, 1 = Girls; * $p < .05$, ** $p < .01$.

4. Discussion

This study examined whether the two precursors of adolescent smoking intention and willingness as reflecting two paths of unhealthy behaviour, namely reasoned and reactive, are predicted by different normative variables. Regarding intentions, subjective norms were slightly stronger predictors of intentions than descriptive norms. Regarding willingness, descriptive norms were significant predictors, while subjective norms were not significant. In both the preliminary and the present research, descriptive norms were a significant predictor of intentions, which means that they might operate in the reasoned route as well (cf., Gibbons et al., 2009). One can argue, however, that best friends smoking contains an element of significant others, but it is still a prevalence estimate. However, estimated prevalence of smoking in the society was not predictive of intentions and willingness to smoke, suggesting that what is perceived as happening in the immediate environment might be more important than what is anticipated as happening in the society as whole.

Having already tried a cigarette was the best predictor of intentions and willingness, repeating notions that trying a cigarette is connected with higher risk of becoming a regular smoker, so even a first attempt to smoke a cigarette should be prevented. Further, girls were not only more in the group of ever-smokers, but they also reported higher intentions to smoke. This shows the need of interventions targeted especially at female adolescents, because females are more vulnerable to lung diseases (e.g., Sørheim, Johannessen, Gulsvik, Bakke, Silverman, & DeMeo, 2010). In addition, future research could investigate specific gender-related norms.

This research might inspire smoking prevention strategies as smoking bans restricting more subtle but visible social normative influences. Limitations include the use of self-report measures and the cross-sectional survey design.

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