BUSINESS PROCESS MANAGEMENT TRAINING AND CERTIFICATION PROGRAM: A SLOVENIAN – ROMANIAN COLLABORATION EXPERIENCE

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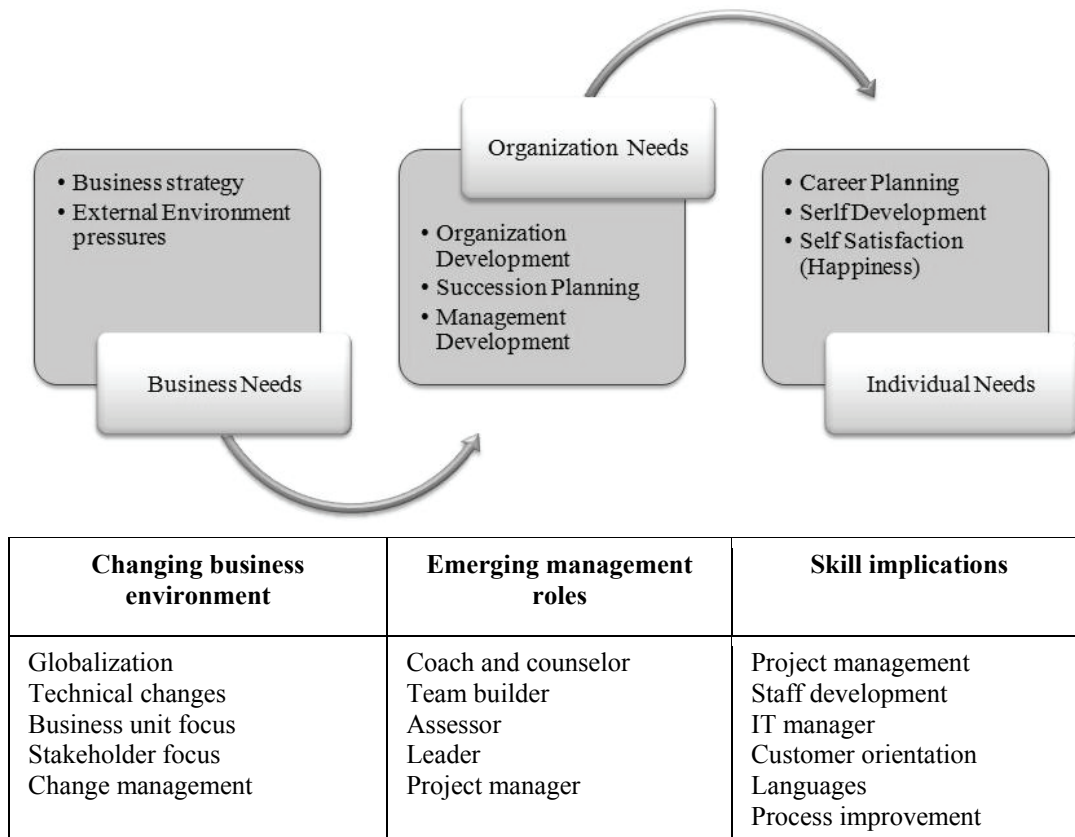tomislav.rozman@bicero.com

Abstract:
The paper presents a Slovenian – Romanian collaboration experience in the context generated by the Certified Business Process Manager - CertiBPM project (under the Leonardo da Vinci Programme, project no. 2010-1-RO1-LEO05-07445). The experience (wisdom, knowledge, information) gained by a Slovenian group of trainers in building, disseminating and practically implementing a BPM training program has been transferred to the Romanian market, by means of a group of Romanian trainers, using the basic knowledge already existing in the field. The motivation of the described collaboration has risen-up from the needs of the modern organizations directed to improving their BPM implementation process. It is known that the most difficult managerial approach is the Implementation Level that is focused on the role information technology and human resources play in developing the soft assets required for executing the business processes. At this level, managers, supervisors, specialists will need to go through a learning process during which they gather new information, experience certain emotions, and try out new things to understand the change content, directions and meanings. The key factor in accelerating the BPM implementation process is linked with the correct employers' involvement in an adequate BPM training program. CertiBPM training program can be a feasible solution for satisfying this organizational need. The main ideas approached and discussed under this training program are further on briefly outlined: (1) the improved BPM training program design process (the design of the skill set for the new profession and of the training program structure); (2) the development of the transfer of innovation process, seen as a knowledge transfer and share; (3) methodological aspects regarding the procedure of certification by the European Qualification and Certification Association (the certification body); (4) brief overview of the CertiBPM learning units and elements.

Keywords: business process management, skill set, qualification, training program, certification, European certification and qualification association.

1. INTRODUCTION

Business Process Management (BPM) represents a holistic management approach based on continuous improvement processes, change management theories, and support by modern information and communication technologies/systems. This approach aims at attaining an optimal balance between the dynamics of the organization's external environment and its internal processes functionalities based on innovation, flexibility and agility (Brocke & Rosemann, 2010). This new management approach is developed in the context of the management development model and it requires new and dynamic management skills (Figure 1).

Figure 1: The General Management Model and the Related Skills Needed for Managers

Changing business environment	Emerging management roles	Skill implications
Globalization	Coach and counselor	Project management
Technical changes	Team builder	Staff development
Business unit focus	Assessor	IT manager
Stakeholder focus	Leader	Customer orientation
Change management	Project manager	Languages
		Process improvement

Nowadays, the difference between successful and unsuccessful organizations is related to their vision, to the strength and determination of their strategy or to the level of their investments (Emerson, 2006). New change management challenges help organizations to reach the success during times of great change. BPM implementation process in a big change management process that has to be piloted by considering issues such as: successfully planning, implementation and communication, determination of employees' involvement and commitment, as well as definition and implementation of measurement systems during change process development. It is known that the most difficult managerial approach when implementing a BPM process into an organization is the so called *Implementation Level* that is focused on the role information technology and human resources play in developing the soft assets required for executing the business processes (Hamon, 2007).

Implementing this specific change in an organization can be considered as a *linear process*. This is usually managed using different kind of techniques, like project management or human resources management strategies/policies, which are restricted to the allocation of different resources (raw materials, energy, financial resources, people' skills and competencies, knowledge, know-how, time). Overall, the BPM change management process successful implementation is a teamwork activity. However, the reaction of some people/employees, or what we call behavioral change, cannot be planned in time as it is a *cyclic process*. Those employees will need to go through a learning process during which they will receive new information, experience certain emotions, try out new things etc. (they will need special support). On the other side, there will be employees that will rapidly agree and understand the change (direction and sense) and will have an open and desirable behavior. According to the results of the study performed by Tonia de Bruin and Gaby Doebeli (June 2008), when a company changes from a functional to a process driven organization, the learned lessons discovered and debated were grouped in four categories: the BPM approach, the BPM skills and expertise; the executive buy-in and the organizational culture. The authors recognized and confirmed the fact that the development of BPM skills through the support of the organizational culture (based on policies related to a learning organization and to the development of a knowledge share culture) is a key factor for a successful BPM implementation.

Many training organizations, vendors, offer BPM training programs that are able to support companies and their employees (course attendees) during the change management process required for the BPM implementation. During the last few years, several BPM related certifications appeared on the market, delivered by: Object Management Group Certified Expert in BPM certification (OMG, 2011), ABPMP (ABPMP, 2011), International Process and Performance Institute (IPAPI, 2011), BPM Council (BPM Council, 2011). The most known vendors in the field are: IBM, AuraPortal, Bizagi, Ultimus, IDS Scheer, webMethods, IBM Lombardi that offer training specialized on the implementation using different software solutions.

The present paper will debate and present the development of the BPM training program, in the particular in the context of: (1) Leonardo da Vinci Programme, project no. 2010-1-RO1-LEO05-07445 (financial support and knowledge exchange environment) (CertiBPM, 2009); (2) Transfer of Innovation process from Slovenia to Romania. The experience (wisdom, knowledge, information) gained by a Slovenian group of trainers (mainly located in Maribor) in building, disseminating and practically implementing a BPM training program has been transferred to the Romanian market, using the basic knowledge already existing in the field, by means of a group of Romanian trainers (located in Timisoara). The main ideas that will be approached in the paper are: (1) the process of designing an improved BPM training program (design of the skill set for the new profession and of the training program structure); (2) the development of the transfer of innovation process, seen as a knowledge transfer and share; (3) the methodological aspects regarding the procedure of certification by the European Qualification and Certification Association (certification body, well-known and appreciated in Europe); (4) brief description of the CertiBPM learning units and elements. Finally, some conclusions related to our work will be synthesized.

2. THE CertiBPM TRAINING PROGRAM DESIGN

The CertiBPM training materials were elaborated with respect and according to the guidelines and requirements of the European Certification and Qualification Association (ECQA,

www.ecqa.org). The original training program and materials have been developed trough creative, synergetic energy of the project members' interactions (during face-to-face project meetings and virtual meeting using Skype conference facilities, since December 2010 until December 2011). The Training Material, version 2012 (in English, see Table 1), was developed within the international consortium *Certified Business Process Manager* project (CertiBPM, 2009): BICERO, Business Informatics Center Rozman Ltd, Slovenia, www.bicero.com (Initial author of the course); Politehnica University of Timisoara, Romania, www.upt.ro/ (Project applicant); proHUMAN, Cooperation and Business Management Ltd., Slovenia, www.prohuman.si (Core partner); I.S.C.N., International Software Consulting Network, Ireland, www.iscn.com (Core partner); Denkstatt - Sustainable thinking, Romania, www.denkstatt.ro (Core partner)

Table 1: The CertiBPM Training/Qualification Program – Learning Units and Elements
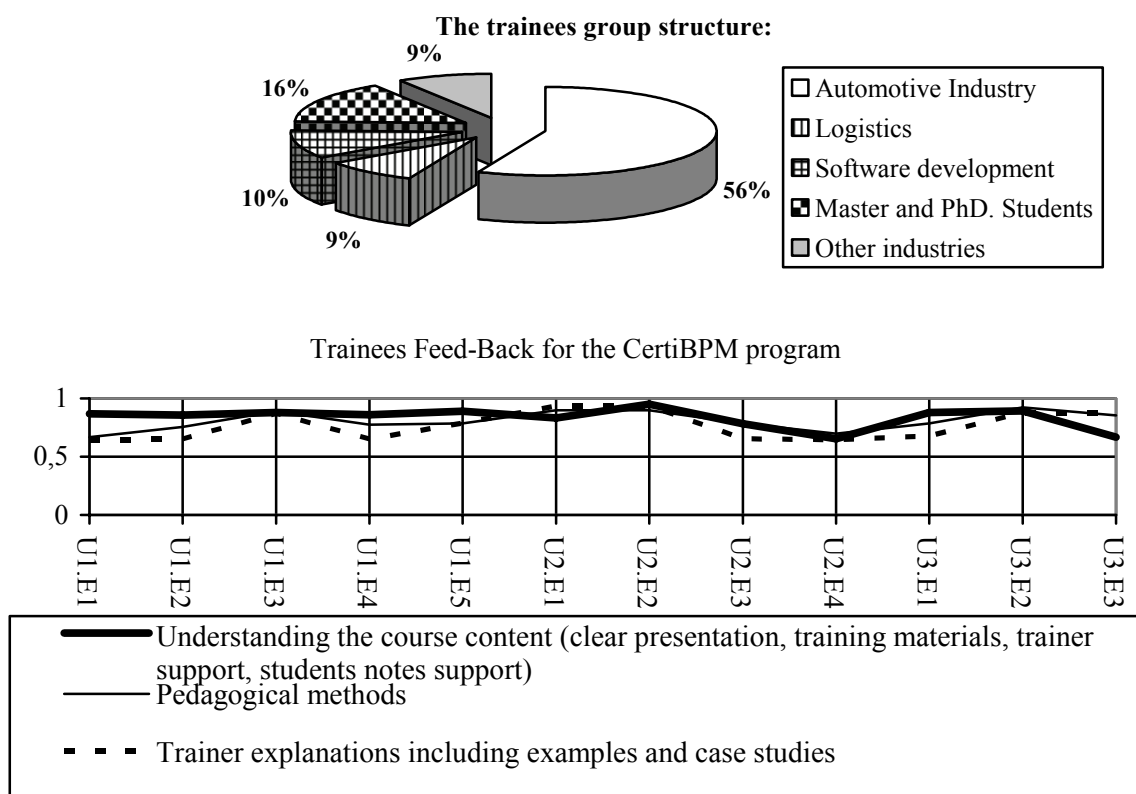
Learning Units and Elements Code	Learning Units and Elements Title	No. of Performance Criteria
BPM.U0	**Informative package**	**5**
BPM.U0.E0	Introduction	2
BPM.U0.E1	ECQA and certification information (demonstration on www.ecqa.org and the Learning Portal)	2
BPM.U0.E2	Conclusions and References data base	1
BPM.U1	**Process Oriented Management**	**24**
BPM.U1.E1	Management System (ISO 9001:2008)	5
BPM.U1.E2	Managing BPM projects	5
BPM.U1.E3	BPM and Modeling	5
BPM.U1.E4	Documenting Business Process	4
BPM.U1.E5	Process Simulation & Analysis basics, tools and techniques	5
BPM.U2	**BPM and Information Technologies (IT)**	**16**
BPM.U2.E1	Choosing your BPM tool/platform	5
BPM.U2.E2	BPM tools/platform	7
BPM.U2.E3	BPM and Enterprise architecture	2
BPM.U2.E4	BPM systems and IT integration	2
BPM.U3	**BPM human aspects. Frameworks and Standards**	**12**
BPM.U3.E1	Human factors in BPM	4
BPM.U3.E2	Motivating people for process change	3
BPM.U3.E3	BPM models, frameworks and standards	5
BPM.U4	**BPM Specializations**	**-**
BPM.U4.E1	BP manager for IT processes	-
BPM.U4.E2	BP manager for core sales & marketing processes	-

The objectives of each training session (workshops with different target groups from Romania in 2012) are related to the needs of different entities. *Project managers* (as project managers, CIOs, quality managers, organization managers, process owners, unit leaders, business analysts**)** wish to: document business processes; model business processes; manage business process projects; change the way their employees work; *Users of different BPM solutions* (as employers trainers, quality supervisors, IT supervisors, administrators or consulting, human resources managers) implemented in companies want to: better understand the users' perceptions and to correct their misunderstandings by improving the software solutions; avoid misunderstandings and develop better user's guides; find the best support solution for the

change management process when the BPM software solution is implemented or updated or when they are confronted with new users (accelerate the learning process).

The structure of the training group (trainees target group from the West Region of Romania), together with some feed-back impressions regarding the pedagogical method used for in-class and on-line training and the content of the CertiBPM training program, are presented in Figure 2. The group of trainees is representative for the Western Region of Romania, if the economic specificity is taken into consideration. The CertiBPM training program evaluation (feed-back collection from the trainees) proves that the main learning units and elements were very well perceived by the target group.

Figure 2: Statistics of the Group of Trainees Included in the Training Sessions held Timisoara (March 2012) and their Feed-Back Regarding the Content of the CertiBPM Training Program

The trainees group structure:

- ☐ Automotive Industry
- ⊞ Logistics
- ⊞ Software development
- ◼ Master and PhD. Students
- ☐ Other industries

9%
16%
10%
9%
56%

Trainees Feed-Back for the CertiBPM program

U1.E1 U1.E2 U1.E3 U1.E4 U1.E5 U2.E1 U2.E2 U2.E3 U2.E4 U3.E1 U3.E2 U3.E3

Understanding the course content (clear presentation, training materials, trainer support, students notes support)
Pedagogical methods
Trainer explanations including examples and case studies

PhD and master students want to understand the BPM process in its complexity and to develop studies, researches regarding different issues related to using, exploiting and optimizing the software solutions implemented in different companies. Also, from their perspective as future users of a specific BPM solution or system, they are interested in getting familiar with the concept and with its main functionalities. The main goal of each training session is for the trainees to gain comprehensive knowledge about the whole business process management lifecycle, from identification, modeling to information, simulation and analysis, human resources aspects, project management, software tools and management skills development and other detailed aspects. The most powerful argument of our approach is that it tries to improve the trainees' own business transparency, quality of services and communication by considering the particularities of their business internal (own employees of different qualifications) and external environment (suppliers, clients, business partners and others).

3. THE KNOWLEDGE TRANSFER AND SHARE PROCESSES BETWEEN SLOVENIA AND ROMANIA

The collaboration of the CertiBPM project partners (most of them Slovenian and Romanian) has contributed to the definition of the Transfer of Innovation process (as a requirement/main objective of the Leonardo da Vinci project) by considering the knowledge transfer and sharing processes between experts and teams. Figure 3 and Table 2 show the phases of development and progress of this process.

Figure 3: The CertiBPM Transfer of Innovation Process
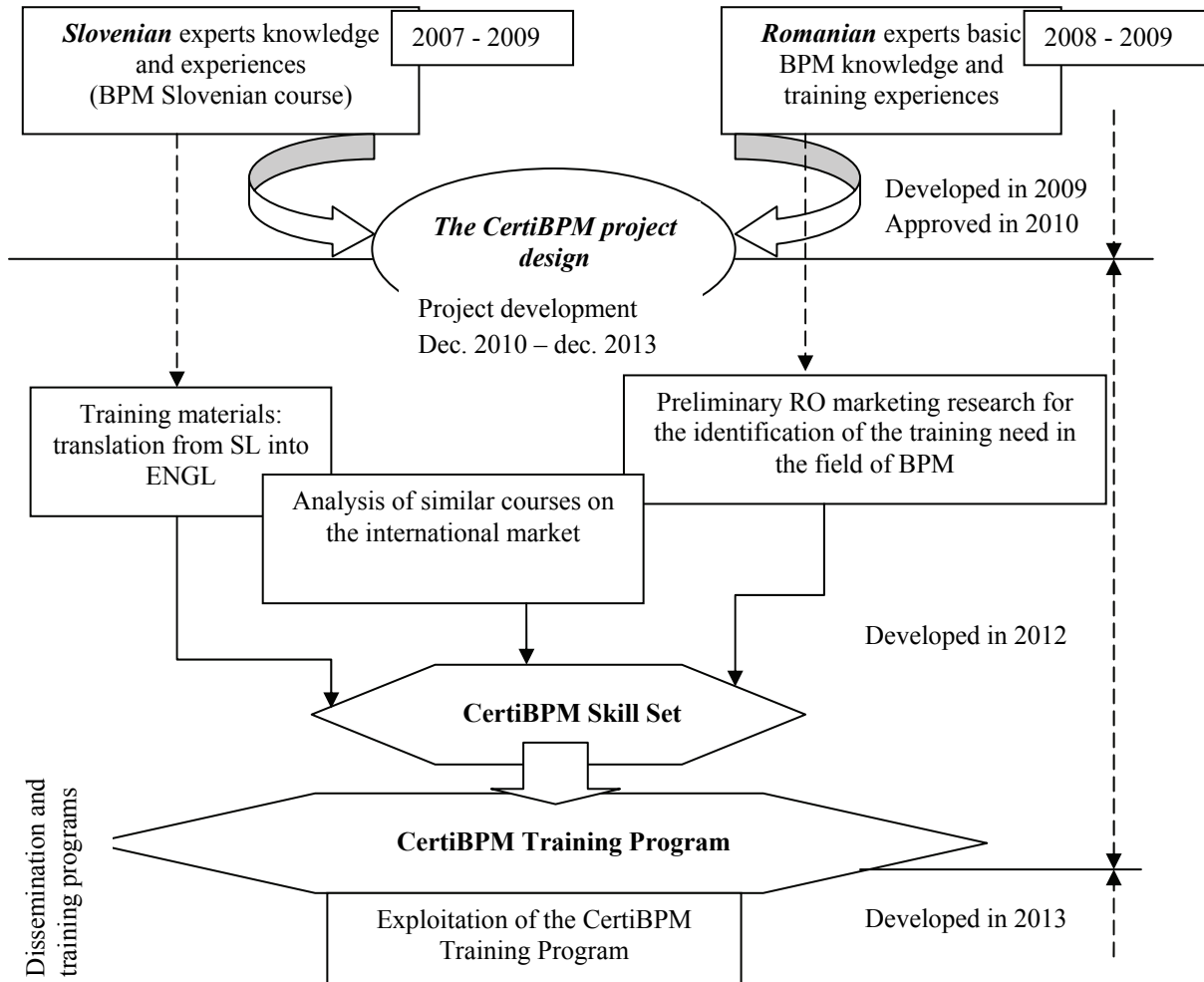
Table 2: Knowledge Transfer and Sharing Activities between CertiBPM Project Partners (the support actions for the Transfer of Innovation)

Specific activity of CertiBPM project	Knowledge Transfer activities/tools	Knowledge Sharing tools
Project proposal	Know-how transfer in the field of BPM qualification Strategic alliance creation for new knowledge transfer and for research	Description of some project work packages (related to the skill set development; dissemination and exploitation; description of project's specific objectives on the RO market; Skype meetings and e-mail

		exchange
Training materials translation from Slovenian into English	Know-how transfer in the field of BPM (basic materials delivery)	Face-to-face discussions and demonstrations Skype meetings and e-mail exchange Virtual office definition and use Project web page ECQA web page
Analysis of similar courses (and certification) on the international market	Research report analysis	
Preliminary Romanian marketing research for the training need identification in the field of BPM	Research report analysis (marketing survey)	
CertiBPM Skill Set	Brainstorming, Mind maps for different versions; Knowledge integration of the research results	
CertiBPM Training Program	Development of the learning materials (PPT. and students notes); multimedia materials; e-learning system (Moodle platform)	
Exploitation of the CertiBPM Training Program		
Dissemination of the CertiBPM project activities and results; CertiBPM training program, certification opportunities, profession	-	Face-to-face e-mail mail telephone Internet

4. THE CertiBPM TRAINING PROGRAM CONTENT DESCRIPTION

4.1. Methodological Aspects for the Training Materials Development and the Examination/Certification Procedure

The training program structure was designed and built with respect to the European Certification and Qualification guidelines and rules. According to these requirements, the issues that are mandatory for defining a new profession are: the skill set description, the development of learning units and elements, and the definition of the performance criteria for each learning element. This basic structure is shown in Figure 4 (Riel, 2006). If this structure is well defined and the units and elements are well described and consistent in relation with the performance criteria, the profession is recognized by the ECQA (the Job Role Committee, usually made up of representatives from a Leornado da Vinci project - the entity that assures the financial support for this development, is a committee that joins together specialists and personalities in the specific professional field and that is also recognized by the ECQA as a valid body) and the examination process is supported in order to generate ECQA certificates for the corresponding profession (the Job Role Committee can start preparing the questions pool for the examination, in close connection with the corresponding performance criteria, in accordance with the ECQA Examination Guidelines) (Korsaa et.al., 2010).

The examination questions (for the on-line examination procedure, after logging in on the www.ecqa.org, section: *Certification and Examination – Exam Registration*) are developed as multiple choice questions (maximum 4 types of answers). The examination process has to be very well understood by the participant with respect to the ECQA procedure. The following rules have to be applied (Messnarz et al., 2007; Messnarz, 2008):
1. The start and end time of the exam is set by the exam organization (after the agreement of the members of the Job Role Committee that have contributed to the development of the training materials and that were involved in the organization of some training

sessions). All the participants at an examination process have to be registered on the web portal.

2. The user can attend the exam at any time after the examination period has started and before it will end.
3. During the exam, the participant can log in and log out from the system. The answers are stored in the database.
4. If an internet connection break occurs (the wireless connection drops, the internet does not work etc.), a warning message will be displayed. The user has to log out. After the connection has been re-established, the user can log in and has to re-check if his/her last answers have been correctly saved. In case any problems occur, the person supervising the exam should be informed.
5. The results of the exam are displayed after the exam is closed by the exam organization. If the user finishes the test earlier, he/she will not be able to view the results.
6. The results are calculated and displayed per learning element.
7. To pass a learning element, at least 66 % coverage of the respective learning element is required.
8. 10 random questions are selected out of each learning element.
9. Each question has at least one correct answer.
10. If the participant selects a wrong answer, the question is scored zero (0 %)
11. All questions are equally weighted; the results are calculated with the average algorithm (total scores of all questions per element / number of questions per element).

The evaluation rules are shown in Table 3. If the participant didn't select all correct answers he/she will not receive 100 % for the question but the values that are shown in Table 2.

Table 3: ECQA Evaluation Rules

Total number of correct answers in the exam pool	Correct answers selected by the user	Score per question
1	0	0 %
2	1	50 %
3	1	33 %
3	2	66 %
4	1	25 %
4	2	50 %
4	3	75 %

Source: Messnarz, 2008.

Figure 4: General Structure of a Recognized ECQA Training Program
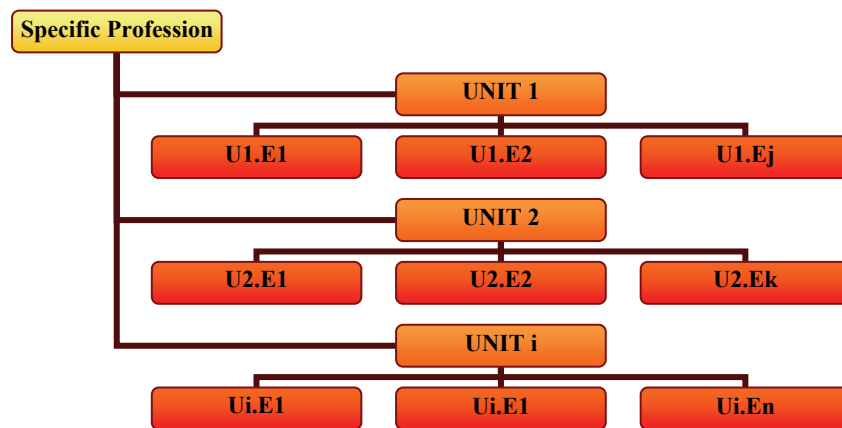
4.2. Brief Description of the CertiBPM Training Program Content

The CertiBPM training program units will be briefly described further on.

BPM.U0 - Informative Package will present a general overview of the CertiBPM development context. This is only an informative unit for the trainees and there will be no examination questions prepared. There are three main elements that define the content structure of this unit: E0 – Introduction; E1 - ECQA and certification information; E2 - Conclusions and References data base.

BPM.U0.E0 – Introduction - The training program structure (U, E, PC) and the motivation/need for such training program (including benefits and positive effects for people working in companies - real business processes) will be presented under this element. At the same time, the skill card will be detailed using the available knowledge map (general overview of the training program content, of the duration of all units/elements) and the agenda/timetable of the training sessions will be communicated to the attendees.

BPM.U0.E1 - ECQA and Certification Information - Details (info) about ECQA Certified Business Process Manager Certification (www.ecqa.org) will be provided under this element. The main idea is to get participants familiar with the ECQA products and services and with the web site (including the learning portal). The working methodology is an on-line demonstration, using the ECQA web site, also showing the registration procedure on the learning portal (facilities).

BPM.U0.E2 - Conclusions and References data base - A references data base (including papers, books and other materials related to BPM in English, Slovenian, Romanian, German languages) will be developed with the support of all partners involved in the project. Particular attention will be paid to the important web pages related to professional associations in the BPM field. In addition, an overview of other types of certifications and courses will be made available for the interested participants.

BPM.U1 - Process oriented management - The aim of this element is to make an introduction to process approach, management systems, ISO9001:2008, difference between functional and process oriented organization. This element includes the following training aspects: introduction, motivation, decision model, decision factors for BPM platform (modeling

abilities, user and role management, teamwork, UI possibilities, portal, process tracking and lifecycle management, analysis and simulation, technology, support).

BPM.U1.E2 - Managing BPM projects - This element is focused on the following training issues: introduction to the project management of the BPM projects, general steps, phases, emphasis on modeling. The preparation of the kickoff document and the rough plan for process re-engineering project will be the main topics related to the exercises. In the context of this element, discussions will be developed based on comparisons with other complex projects (i.e. building a house) and this will be supplemented with a presentation/debate on project management roles. The learning issues will focus on: description of project phases - identification of processes, information gathering, modeling, documenting; evaluation of required effort, time, resources; project planning and tracking example; kick-off document for BPM project example; most common obstacles.

BPM.U1.E3 - BPM and Modeling - This learning element will approach the following topics: motivation for process modeling; Business Process Modeling notation 1.2 and 2.0; process model elements: roles, events, activities, connections, artifacts; process modeling patterns; simple and complex examples of process models; internal processes; inter-organization processes; process modeling methodology and practical example; subset of graphical notations for non-technical people. This is one of the most important learning elements in the training unit U1.

BPM.U1.E4 - Documenting Business Processes - The learning element is focused on the following subjects: (1) comprehensive documenting of processes, according to ISO 9001 - examples of "process description document"; (2) the structure of the documentation - examples of documentation for different purposes (Quality Management System, Information System development); (3) managing interviews with stakeholders (process info providers); (4) parallels with requirements related to information gathering in respect of the IT system.

BPM.U1.E5 - Process Simulation & Analysis basics, tools and techniques - Under this learning element trainers will be focused on: (1) motivation for simulation and analysis of business processes; (2) simulation methodology and steps; (3) relation to business goals and most common management questions; (4) simulation using software platforms (OSS, commercial, SaaS); (5) analysis of process simulation data, bottlenecks, execution times, resource optimization, queues, simulation scenarios. Examples: Bonita Studio, G360 analyst View.

BPM.U2 - BPM and Information Technologies is much more related to the practical issues of implementing and using the BPM solutions.

BPM.U2.E1 - Choosing your BPM tool/platform - This learning element will start with a short introduction and motivation on the existing BPM platform, as well as on the development and implementation of such a platform in a company. Then, the decision model, decision factors for the BPM platform (modeling abilities, user and role management, teamwork, UI possibilities, portal, process tracking and lifecycle management, analysis and simulation, technology, support) will be presented. Finally, an example of decision model for a BPM platform will be illustrated.

BPM.U2.E2 - BPM tools/platform - This learning element is related to BPM platform business and IT models presentation. The most important aspects presented in these learning

materials are: buy/lease the system, monolith BPM tools, client-server, web based and SaaS. Particular attention will be paid to the types of licenses that can be used for BPM tools, namely: commercial/open source facilities. Benefits, pitfalls and examples will be also provided (ARIS Express, Bonita Studio, Visio). Examples of different IT models/software solutions are included in the learning materials: ARIS methodology (roles, functions, data, control), ARIS tool, ARIS Express example; Intalio (open source) BPM platform, user interface, benefits, pitfalls; Bonita Studio - example of integrated BPM suite. The following aspects will be approached: modeling, simulation, transformation into execution mode (web application); Microsoft Visio with various add-ons (OSS, Global360); IBM solution for BPM.

BPM.U2.E3 - BPM and Enterprise architecture - This learning element is related to BPM, investigating rather the technical aspects such as: integration technologies and paradigms such as SOA, ESB, Web Services and other standards. Some examples of IT architecture for BPM system will be included in order to be debated so as to better understand the course content. The structure of this element will be focused on: integration with ERP systems, databases, queues; modern enterprise IT architectures; relation and comparison with ERP, CRM, BI systems; OBASHI methodology for the description of the IT architecture.

BPM.U3 - BPM Human Aspects. Frameworks and Standards is an original development of the proposed CertiBPM training program. This unit makes the difference between other existing courses or training programs on the market and the training we propose under the CertiBPM program.

BPM.U3.E1 - Human factors in BPM - Under this element, some aspects related to human factors and human behavior when implementing a BPM platform in a company (motivation of employees and managers support, change management – avoid change resistance, IT specialists support etc.) will be detailed. At the same time, some instructions/advices of how to overcome human obstacles in working/adopting the BPM system/platform are presented.

Case study 1: BPM project and analysis of stakeholders' reactions. Guidelines for process analyst: how to prepare for dealing with people's attitudes, the most common obstacles.

Case study 2: Demonstration and debate regarding aspects such as: empathy based (soft) approach; psychological contracts; human aspect of process information gathering; human aspects of BP introduction into a company; managing people who are reluctant to changes of business processes (cultural aspects can prove important when a BPM project is implemented or developed).

BPM.U3.E2 - Motivating people for process change - This element highlights aspects that motivate people when a BPM platform/system has to be implemented and/or developed – BPM project: (1) intrinsic and extrinsic motivation factors; (2) communication issues that can motivate people (argumentation, discourse etc.); (3) empathy based (soft) approach, psychological contracts; (4) facilitators of the changes management process (how to better support the change management processes).

BPM.U3.E3 - BPM models, frameworks and standards - This content is also required by OMG OCEB certification (fundamental). The learning element will be focused on: introduction to BPM models, frameworks and standards - brief presentation of the existing models, framework and standards; BMM (Business Motivation Model); APQC - American Productivity & Quality center Process Framework; SCOR - Supply-Chain Operations

Reference Model; VRM - Value Reference Model; BPMM - Business Process Maturity
Model; Six-sigma - Strategic management of processes based on statistics; BSC - Balanced
Scorecard; COBIT - Control Objectives for Information and related Technology (ISACA);
Basel-2 - Standard for banking, insurances and guarantees; Sarbanes-Oxley Act - Public
Company Accounting Reform and Investor Protection Act in Unites States.

BPM.U4 - BPM Specializations - This unit is related to some complex examples/case studies
that will be built based on practical issues (BPM systems built in real enterprises). Case
studies are related to: (1) Business Process manager for IT processes; (2) Business Process
manager for core sales and marketing processes; (3) BPM case study for public
administration.

5. CONCLUSIONS

The paper has shown an efficient and effective Slovenian and Romanian collaboration in
order to develop a BPM training and certification program. First, the design process of the
improved BPM training program (skill set design of the new profession and the training
program structure) so called CertiBPM has been presented. The skill set is the core of each
training program according to the ECQA philosophy and guidelines. Second, important
aspects of the transfer of innovation process have been underlined as important issues of the
international partnership and of the collaborative work support. The transfer of innovation
process development was seen as a knowledge transfer and share process between project
partners and members. Third, methodological aspects regarding the certification procedure
were described in the framework of the European Qualification and Certification Association
(certification body well recognized in Europe and considered also for the CertiBPM
program). In the fourth part, a brief presentation of each learning unit, together with its
elements, was performed in order to better understand the common effort of the partners in
collecting, transferring and sharing knowledge in the BPM field. In the next period, we shall
be able to exploit the results of our training program on the Romanian market. At the same
time, the training materials will be translated into Romanian language and the examination
questions will be prepared (in English and Romanian language).

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European Commission. This paper and communication reflects the views only of the authors,
and the Commission cannot be held responsible for any use, which may be made of the
information contained therein.

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