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WORD OF THE EDITOR

On the occasion of celebrating an important anniversary of the Serbian Project Management Association (YUPMA), its 25 years, we are proud to launch a Serbian Project Management Journal, a specialized journal that is to present the most recent knowledge in the fields of project management and other specialized management disciplines.

The development of project management in Serbia, since its beginnings in 1970s, to the establishment of the Project Management Association in the 1980s, until today, went through many a difficulty. Regardless of severe problems that this country and the Project Management Association encountered, project management gradually developed and was implemented in this country, and today it is evident that the implementation of project management is a sine qua non in almost all the areas of human life and work.

It is our genuine wish in launching this journal to contribute to the further project management development and implementation in Serbia.

*Petar Jovanović*

President of Serbian Project Management Association YUPMA
SPECIFIC PROJECT PORTFOLIO MANAGEMENT TECHNIQUES FOR MONITORING AND CONTROLLING ENTERPRISE PROJECTS

Eduardo García Escribano - Connectia Solutions Factory, Madrid, Spain

Abstract: The main purpose of this paper is to emphasize the importance of applying specific project portfolio management techniques in monitoring and controlling enterprise projects. Nowadays, companies have too many projects and have to execute them with limited resources, which they must use efficiently, assigning them correctly to the right projects and coordinating the joint execution of them so that synergies could be achieved. We try to focus the project portfolio management on the control processes of the portfolio, analyzing the necessity of selection techniques to incorporate appropriate projects to balance the entire portfolio with the strategic objectives, procedures to report the portfolio and decision techniques of the status of each of the projects.

Key words: balance, decision techniques, project portfolio management, report, strategic objectives, selection techniques.

1. INTRODUCTION

In today’s changeable and highly competitive environment companies have to dedicate significant time, human and financial resources to achieving strategic goals that can be translated into projects and programs (Pajares, J. López Paredes, A. Araúzo, A. Hernández, 2009).

As defined by the Project Management Institute (PMI), a project is a temporary endeavour undertaken to create a unique product, service, or result (Project Management Institute, 2004). A program is defined by PMI as a group or related projects managed in a coordinate way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside the scope of the discrete projects in the program (Project Management Institute, 2006). The IPMA has also defined the program as being concerned with achieving strategic goals of the organization. It consists of a set of related projects and required organizational changes to reach a strategic goal and to achieve the defined business benefits (International Project Management Association, 2006). The programs of the portfolio may not necessarily be interdependent or directly related (Project Management Institute, 2006).

The concept of project portfolio techniques was originally developed by General Electric/McKinsey and Boston Consulting Group (BCG). In 2006 the Project Management Institute introduced the Standards for Portfolio Management that provide guidance to managers and help them develop professionally with the purpose of describing generally accepted processes associated with portfolio management. These provide guidelines for the process of portfolio management and focus on the relationship among portfolio, program and project management. Within an organization, the portfolio reflects the priorities, investments and resource allocations. As a process, it enables organizations to identify, categorize, evaluate, select, prioritize, authorize, terminate and review various portfolio components to ensure their alignment with current and future business strategies and goals, which in turn helps organization optimize limited resources.

The paper is organized as follows: first, we will briefly summarize the main objectives of project portfolio management techniques, we will analyze the importance and the necessity
for the use of project portfolio management techniques and we will review the critical areas of project portfolio management in enterprises. In section 2, we will see the importance of the project alignment with the organizational strategy. Then, in section 3, we will see that we can divide portfolio management control into three areas and we will describe the most useful techniques of project portfolio control in each of these areas. We will end with the main conclusions of this paper.

1.1. THE OBJECTIVES OF PROJECT PORTFOLIO MANAGEMENT TECHNIQUES

The primary objective of portfolio management is to maximize the return on project-related investments and benefits from it, while effectively minimizing risks to the projects and the organization.

Brokers and financial investors often have a portfolio of individual and related group investments, with the ultimate focus on maximizing the value of the entire portfolio. The same strategy is applied to the enterprise project portfolios using project portfolio management (Greg Indelicato, Parviz F. Rad, and Ginger Levin, 2007).

If we define a project portfolio as a group of projects (investments) that compete for scarce resources and are conducted under the sponsorship or management of a particular enterprise (Archer NP, Ghasemzadeh F., 1999; Dye LD, Pennypacker JS, 1999), we can see the following objectives of project portfolio management techniques: (a) Ensure that the portfolio is aligned strategically with the purpose of ensuring that the interactions among the various projects in the portfolio are synergistic with the enterprise strategy; (b) Get the maximum value of the portfolio; (c) Achieve the necessary balance between the various projects that are running; (d) Run the appropriate number of projects; (e) Achieve client satisfaction, to the extent that the results obtained from the projects undertaken better respond to your requests or needs; and (f) Communicate priorities clearly and accurately to the staff from all areas of the organization.

1.2. THE IMPORTANCE AND THE NECESSITY OF ENTERPRISE PROJECT MANAGEMENT PORTFOLIO TECHNIQUES

CEOs need to compare operating results against budget, identify deviations and take corrective action if necessary, that is to say, they need indicators to monitor the evolution of the project portfolio against the strategy and take the necessary corrective measures.

On the other hand, project managers the companies worldwide need a language for communicating the strategy to the different work teams as well as the process and systems that help them implement strategy and gain a feedback about their strategy. They need different techniques to develop the objectives and the strategy of a company.

In companies where intangible assets have become the major sources of competitive advantage (Robert S. Kaplan, David P. Norton, 1996), project portfolio management techniques are required to manage the knowledge-based assets and to control the value creation strategies that these assets make possible (Robert S. Kaplan, David P. Norton, 2001).

1.3. ENTERPRISE CRITICAL AREAS IN PROJECT PORTFOLIO MANAGEMENT

If we conduct a review of the relevant literature on project portfolio management, we can see that the current state of practice in companies shows three areas of practice in which it is difficult to make significant progress, and which appear to be critical to corporate success: (a) Portfolio management practices that allow the enterprise to resource fully a suite of projects that are thoughtfully and dynamically
matched to the corporate strategy and business objectives (Cooke-Davies, T., 2002); (b) A suite of portfolio metrics that provides direct feedback on current project performance, and anticipated future success, so that project, portfolio and corporate decisions can be aligned (Robert S. Kaplan, David P. Norton, 1996; James Norrie, Derek H.T. Walker, 2001) and (c) An effective means of learning from experience on projects that combines explicit knowledge with tacit knowledge in a way that encourages people to learn and to embed that learning into continuous improvement of project management processes and practices (Kerzner H., 2000).

Companies need to make great efforts and have to dedicate resources on improving each of these three critical areas of the project portfolio management.

2. PROJECT ALIGNMENT WITH ORGANIZATIONAL STRATEGY

We can define organizational strategy (P. FitzRoy, J. Hulbert, 2005) as the common theme underlying a set of strategic decisions, and these are decisions that affect the long-term well-being of the organization. Companies intend to seek strategic alignment of projects with the following criteria: Investments in projects that make the company actually correspond with their business objectives and strategies, portfolio projects that are key components of their business strategy and a combination of projects implemented that reflects its strategic priorities.

For all of these, we need to measure alignment: to identify the elements of a company’s strategy, such as build brand value, invest in core technologies, build organizational effectiveness, and revitalize quality, etc., to rate each project based on the degree of impact we expect it to have on each strategy, to add the individual ratings to provide an overall strategy score and combine this score with ratings on other criteria, such as net present value or risk.

A pattern revealed through research indicates that organizations can align projects with business strategies into three levels (Milosevic, D., Srivannaboon, S., 2008): (a) The strategic: managers used portfolio management to determine the right projects that would contribute to the organization’s goals; (b) The tactical: involves delineating additional detail for the projects selected as a means to ensure proper alignment with the project life cycle; and (c) The corrective emergent strategic feedback: as the project is executed, emergent actions occur that may change the intended strategy. This level ensures feedback from the project level as a means to allow the business strategy to adapt to its competitive attributes brought on by change.

This approach has all of the flaws identified above typical of most scorecard approaches, plus some additional problems (John Henderson, N. Venkatraman, 1990): (a) Given the subjectivity involved, it would be hard to get consistent and repeatable scores from different people; (b) Isn't the goal of strategic alignment to get the project portfolio that best implements strategy? The scoring approach does something different, because it favors projects that impact the numerous highly weighted elements of the strategy; and (c) How do we know that the organization's expressed strategy is optimal? How do we know that choosing projects that align most closely with strategy will produce the best outcomes for the organization?

As we have seen, standardizing project methodologies can be a good thing but standardization does not go far enough to address the issues of values and behaviors. However, many organizations need to implement project portfolio management techniques to align projects with corporate strategy and act as a central point of
management for all projects. These techniques contain a structured process that helps project managers select, prioritize, and control all projects based on their relative importance and contribution to the organization’s overall strategic and operational strategies.

3. CRITICAL AREAS IN PORTFOLIO MANAGEMENT CONTROL. MOST USEFUL TECHNIQUES

As we said in previous points, today’s business environment is complex and requires faster decisions, better allocation of scarce resources, and a clearer focus. An organization consisting of a constantly changing mix of large and small projects presents senior management with new challenges in resource planning, prioritization and monitoring.

The project portfolio management emphasizes the process, the roles and the responsibilities of portfolio stakeholders and their influence on the company (Project Management Institute, 2006) that concentrates on aligning, monitoring and control process, which forms the basis for strategic planning of the companies (Peter W. G. Morris, Ashley Jamieson, 2005; Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008). Therefore, we need (Elonen, S., Artto, K.A., 2003) a series of selection techniques to incorporate appropriate projects into the portfolio, procedures to report the portfolio, and decision techniques of the status of each of the projects.

With the help of these project portfolio management techniques, companies would be more efficient, flexible and far quicker to respond to the rapid changes in the business environments. There is a need for regularly monitoring the organization’s performance.

Project managers need to select those projects which contribute to the strategic objectives of the company. They choose projects that balance the different objectives in terms of risk and cost, and they monitor the contribution of each project, leaving from the portfolio the projects that do not contribute to the strategic objectives. In short, they have to use efficiently the limited resources of the company, assigning them correctly to the right projects and coordinating the joint execution of them so that synergies could be achieved.

Then, we can divide portfolio management control into three areas or categories (Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008): portfolio selection as a form of behavioral control, portfolio reporting follow-up as output control, and portfolio decision making as interactive control.

3.1. PROJECT PORTFOLIO MANAGEMENT SELECTION

As we have seen throughout the paper, project portfolio management selection is an important management activity of the organization (Archer NP, Ghasemzadeh F., 1999), where the project team must assess every detail, carefully, in order to amplify the performance of the organizational assets and to align them with the strategic objectives of the organization. There are usually more projects available for selection than can be undertaken within the physical and financial constraints of a firm, so choices must be made in making up a suitable project portfolio (Wang, J., Xu, J., & Li, Y.Z., 2009).

Project portfolio management selection emphasizes the use of well-defined criteria against which organizations make decisions about which projects to fund and determine each project’s priority based on its overall contribution to organizational goals and objectives. In any project environment, there can only be one priority project (Dye LD, Pennypacker JS, 1999). Overall, the process is to ensure the existence of an environment in which decision makers are willing to make the hard decisions. Not all projects proposed will add value (Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008).
There are many relatively divergent techniques that can be used to estimate, evaluate, and choose project portfolios, but many of these techniques are not widely used because they are too complex and require too much input data, they provide an inadequate treatment of risk and uncertainty, they fail to recognize interrelationships and interrelated criteria, or they may just be too difficult to understand and use (Cooper, Robert G., 1993).

The process of portfolio selection uses project evaluation and selection techniques in a progression of three phases (Archer NP, Ghasemzadeh F., 1999): strategic considerations (they assist in the determination of a strategic focus and overall budget allocation for the portfolio), individual project evaluation (they are used to evaluate a project independently of other projects), and portfolio selection (they are based on candidate project parameters, including their interactions with other projects through resource constraints or other interdependencies):

- **Strategic considerations**: The strategic implications of portfolio selection are complex and varied, and involve considerations of factors both external and internal to the firm, including the marketplace and the company's strengths and weaknesses. Project portfolio matrices have been used to evaluate the strategic positioning of the firm, where various criteria for a firm's position are shown on one or more displays on two descriptive dimensions. These displays can be used by decision makers to evaluate their current position and where they would like the firm to be in the future (Cooper, R. G., Edgett, S. J. and Kleinschmidt, E. J., 1997; Müller, R. & Turner, J.R., 2007)

- **Individual project evaluation**: The benefit derived through project evaluation methods is measured in terms of each project's individual contribution to one or more portfolio objectives. Evaluation on an individual project basis includes such methods as economic return (see Table 1) (Donald S. Remer, Scott B. Stokdyk & Mike Van Driel, 1993), benefit/cost techniques, risk analysis (see Table 2) (Martino, Joseph P., 1995; Jeffrey L. Riggs, Sheila B. Brown & Robert P. Trueblood, 1994; Dennis S. Kira, Martin I. Kusy, David H. Murray & J. Goranson, 1990), or market research (see Table 3). The use of specific project evaluation techniques is situation dependent. Measures used may be qualitative or quantitative, but regardless of which techniques are used to derive them, a set of common measures should be used so projects can be compared equitably during portfolio selection (Project Management Institute, 2006).

### Table 1 - Definitions of project evaluation techniques: Economic Return.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
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<tbody>
<tr>
<td>Net Present Value (NPV)</td>
<td>The sum of annual cash flows discounted to a particular time zero.</td>
</tr>
<tr>
<td>Internal Rate of Return (IRR)</td>
<td>The discount rate at which the Return NPV equals zero.</td>
</tr>
<tr>
<td>Return on Original Investment (ROI)</td>
<td>The ratio of the original total investment to the average after-tax annual net profit. It is expressed as a percentage.</td>
</tr>
<tr>
<td>Payback Period (PBP)</td>
<td>The time interval between the start of sales and the point at which the total project cash flow becomes positive</td>
</tr>
<tr>
<td>Return on Average (RAI)</td>
<td>The ratio of an average total investment to the average after-tax net profit.</td>
</tr>
</tbody>
</table>
**Return on Investment (RI)**
The general term for either ROT or RAI methods.

**Table 2 - Definitions of project evaluation techniques: Risk Analysis.**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monte Carlos Simulation</td>
<td>A method for iteratively evaluating a deterministic model using sets of random numbers as inputs. This method is often used when the model is complex, nonlinear, or involves more than just a couple uncertain parameters.</td>
</tr>
<tr>
<td>Decision Theory Approach</td>
<td>Identify the values, uncertainties and other issues relevant in a given decision, its rationality, and the resulting optimal decision.</td>
</tr>
<tr>
<td>Bayesian Statistical Theory</td>
<td>The foundation of this decision analysis is the decision tree, which is composed of chance event nodes, decision nodes, and terminal branches. Probabilities are assigned to each branch emanating from a chance node, and the branches emanating from each decision node represent different decisions which may be made.</td>
</tr>
<tr>
<td>Decision Theory combined with Influence Diagram Approaches</td>
<td>Simplify modelling and analysis of decision tree combining Decision Theory and Diagram Approaches</td>
</tr>
</tbody>
</table>

**Table 3 - Definitions of project evaluation techniques: Market Research.**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Panels</td>
<td>Also called Omnibus surveys, are where pre-segmented panel members fill in diaries regularly.</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>These are basically moderated group discussions but can be very useful in getting information out of people.</td>
</tr>
<tr>
<td>Perceptual Maps</td>
<td>A multivariate technique designed to represent consumers' product perceptions and preferences as visual representations or points on a map or graph.</td>
</tr>
<tr>
<td>Preference Mapping</td>
<td>Interested in understanding the relationship between sensory data and consumer preferences for a number of samples/products.</td>
</tr>
<tr>
<td>Bubble Diagrams</td>
<td>A diagram consisting of two axes, with areas of intersection such as proven technology/current customers or long-term/new customers. Proposed projects are represented in these areas as bubbles, with the diameter of the bubbles corresponding to investment intensity.</td>
</tr>
</tbody>
</table>
**Portfolio selection:** Portfolio selection involves the simultaneous comparison of a number of projects on particular dimensions, in order to arrive at a desirability ranking of the projects. The most highly ranked projects under the evaluation criteria are then selected for the portfolio, subject to resource availability. Classes of available portfolio selection techniques include: Ad hoc approaches (see Table 4) (Martino, Joseph P., 1995; D. L. Hall and A. Nauda, 1990), comparative approaches (see Table 5). In these methods, first the weights of different objectives are determined, then alternatives are compared on the basis of their contributions to these objectives, and finally a set of project benefit measures is computed. Once the projects have been arranged on a comparative scale, the decision maker can proceed from the top of the list, selecting projects until available resources are exhausted (Abraham Y. Nahm, Luis E. Solis-Galván, S. Subba Rao, T.S. Ragun-Nathan, 2002; Thomas L. Saaty, Paul C. Rogers and Ricardo Pell, 1980; Sheila Mello, Wayne Mackey, Ronald Lasser, Richard Tait, 2006), scoring models (see Table 6), portfolio matrices (It relies on graphical representations of the projects under consideration, on two dimensions such as the likelihood of success and expected economic value) or optimization models (Martino, Joseph P., 1995; Thomas L. Saaty, Paul C. Rogers and Ricardo Pell, 1980) (based on some form of mathematical programming, to support the optimization process and to include project interactions such as resource dependencies and constraints, technical and market interactions, or program considerations. Some of these models also support sensitivity analysis) (Archer NP, Ghasemzadeh F., 1999).

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Profiles</td>
<td>Limits are set for the various attribute levels of a project and any projects which fail to meet these limits are eliminated.</td>
</tr>
<tr>
<td>Interactive Selection</td>
<td>Involving an interactive and iterative process between project champions and responsible decision makers until a choice of the best projects is made.</td>
</tr>
</tbody>
</table>

**Table 4 - Definitions of project selection techniques: Ad hoc approaches.**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q-Sort</td>
<td>A method of assessing reliability and construct validity of questionnaire items prepared for survey research.</td>
</tr>
<tr>
<td>Pair Wise Comparison</td>
<td>Each alternative is matched one-on-one with each of the other alternatives. Each alternative gets one point for a one-on-one win and a half a point for a tie. The alternative with the most total points is selected.</td>
</tr>
<tr>
<td>Analytic Hierarchy Procedure (AHP)</td>
<td>It first decomposes the decision problem into a hierarchy of more easily comprehended sub-problems, each of which can be analyzed independently. The elements of the hierarchy can relate to any aspect of the decision problem, measured or estimated, as well as anything at all that applies to the decision at hand. Once the hierarchy is built, the</td>
</tr>
</tbody>
</table>
decision makers evaluate its various elements by comparing them to one another two at a time.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Dollar Metric</td>
<td>It is an extension of the paired comparison method in that it requires respondents to indicate both their preference and how much they are willing to pay for their preference.</td>
</tr>
<tr>
<td>Standard Gamble (SG)</td>
<td>It is recommended for measurement of individuals’ preferences under uncertainty and to express the outcome of different choices in utility values.</td>
</tr>
</tbody>
</table>

**Table 6 - Definitions of project selection techniques: Scoring Models.**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Factor Scoring</td>
<td>It uses a relatively small number of decision criteria, such as cost, work force availability or probability of technical success to specify projects desirability.</td>
</tr>
</tbody>
</table>

Among the described methodologies for project portfolio selection, there has been little progress towards achieving an integrated framework that decomposes the process into a flexible and logical series of activities (Dennis S. Kira, Martin I. Kusy, David H. Murray & J. Goranson, 1990; Adriano De Maio, Roberto Verganti & Mariano Corso, 1994). We can decompose the selection process into a series of discrete stages which progress from initial broad strategy considerations towards the final solution (Archer NP, Ghasemzadeh F., 1999). Since we know the desired end result, which is an optimal portfolio that satisfies the constraints placed on it by the selection committee, it is best to analyze the process from end to beginning, to show how information needed for techniques used at each stage is made available from previous stages:

- **Portfolio adjustment:** Selecting a project portfolio is a strategic decision, and the relevant information must be presented so it allows decision makers to evaluate the portfolio without being overloaded with unnecessary information. The final stage is a portfolio adjustment stage which provides an overall view, where the characteristics of projects of critical importance in an optimized portfolio can be represented, using matrix type displays, along with the impact of any suggested changes on resources or selected projects.

- **Optimal portfolio selection:** The interactions among the various projects are considered, including interdependencies, competition for resources, and timing, with the value of each project determined from a common set of parameters that were estimated for each project in the previous stage (R. Santhanam, K. Muralidhar & M. Schniederjans, 1989). AHP, scoring models, and portfolio matrices are popular among decision makers for portfolio selection, because they allow users to consider a broad range of quantitative and qualitative characteristics as well as multiple objectives. AHP, pairwise comparison, and Q-sort are complicated and unwieldy for larger numbers of projects (J. Scott Armstrong and Roderick J. Brodie, 1994).

- **Screening:** Project attributes from the previous stage are examined in advance of the regular selection process, to eliminate any projects or inter-related families of projects which do not meet pre-set criteria, except for those projects which are required to support other projects still being considered.

- **Individual Project Analysis:** It is calculated separately for each project, based on estimates available from feasibility studies.
and/or from a database of previously completed projects. Net present value or return on investment can be calculated at this point. Scoring, benefit contribution, risk analysis, market research, or checklists may also be used. The output from this stage is a common set of parameter estimates for each project.

- **Pre-screening**: It uses manually applied guidelines developed in the strategy development stage, and ensures that any project being considered for the portfolio fits the strategic focus of the portfolio (Archer NP, Ghasemzadeh F., 1999).

All of the techniques we have seen include criterion lists, strategy tables, scoring tables, visual graphs, and force fields analyses to optimization models and holistic portfolio management frameworks (Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008). There is no doubt about the advantages in the application of these selection techniques, but, there are various problems and difficulties we will try to avoid when we apply them in project selection and portfolio management (Archer NP, Ghasemzadeh F., 1999; Elonen, S., Artoo, K.A., 2003; T. Blomquist, Ralf Müller, 2006; Cooper RG, Edgett SJ, Kleinschmidt EJ., 1998; Cooper, R.G., Edgett, S.J. & Kleinschmidt, E.J., 2006; Amaral A. & Araújo M., 2009).

- There is no clear link between the strategy and the selection of projects.
- Poor-quality portfolios and the success potential at launch are inadequate.
- Reluctance to remove projects. As soon as a project has been started is allowed to proceed until the end. Poor projects are hardly ever stopped in the midst of the implementation.
- Scarce resources. Companies have too many on-going projects for the available resources.
- Companies have a tendency to implement the short-term, easy, and cheap projects. As a consequence, they are reducing their future success potential and competitive advantage (Dye LD, Pennypacker JS., 1999).
- Information overflow and lacking quality of information. Project managers may become confused with the amount of information available for decision making.
- Decision making based on power (Pfeffer J., 1993). Power is more important in major decisions where there are interdependencies, in domains in which performance is more difficult to assess (Markham SK, Holahan PJ., 1996).

### 3.2. PROJECT PORTFOLIO MANAGEMENT REPORTING

Project managers can be confused with the amount of information available for decision making, so if the information input is poor, so will the decision making be, so they are also reducing now the potential and competitiveness of the project portfolio (Kerzner, H., 2001).

An effective portfolio management process also needs an effective reporting procedure to take a follow up on actions and decisions taken at the operational level. The portfolio management reporting is considered as a mechanism for portfolio control, and it is considered to be a formal way of communication. The importance of communication can take various forms from formal to informal and from bottom up to top down (Fricke, S. E. & Shenhar, A. J., 2000) and, like a project management skill, contributes to achieving success in portfolio management. Communication is found out to be an interactive control in the form of decision making styles, and has an impact on portfolio results (Turner, J. R. & Müller, R., 2004).

Reporting of the progress of the projects towards the portfolio could be done maintaining regular face-to face meetings by a balance between formal and informal communication using similar templates (see Table 7) (Turner, J. R. & Payne, J.H., 1999). It is recommended that a common communication and reporting platform should be defined and established for all projects in the portfolio, and it is suggested
that a mechanism should be devised to measure and compare projects along similar metrics (T. Blomquist, Ralf Müller, 2006). These reports are collected from portfolio management system and the information is then disseminated in portfolio review meetings, and they are then analyzed and reviewed by the board. These reports are pulled by portfolio managers who analyze the underlying issues and then they are sent to all relevant people, further these project priorities are also sent through emails.

**Table 7 - Definitions of project reporting techniques**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Portfolio Reporting System (PPRS)</td>
<td>Provides accurate and reliable information about all projects in only one system. It is a web-based tool designed to standardize and speed up reporting.</td>
</tr>
<tr>
<td>Monthly Operational Review Reports (MORR)</td>
<td>It is a standardized and central report that provides an overview of project critical data and also an overview of key performance data and trends across the projects.</td>
</tr>
<tr>
<td>Quarterly Operational Review Reports (QORR)</td>
<td>It is a report that allows reviewing the entire project portfolio.</td>
</tr>
<tr>
<td>Project Portfolio Reports (PPR)</td>
<td>Provides information about project status, financial information, adherence to schedule, procurement, and risk. It also helps the organization make decisions about which projects should be added to or removed from the portfolio and which projects need to be given priority.</td>
</tr>
<tr>
<td>Key Performance Indicators (KPIs)</td>
<td>They help an organization define and measure progress toward organizational goals. They must reflect the organization's goals, they must be key to its success, and they must be quantifiable.</td>
</tr>
<tr>
<td>Templates and Metrics</td>
<td>Standard templates and metrics of reporting which are then sent to all relevant people in the project portfolio.</td>
</tr>
<tr>
<td>Face-to Face Meetings</td>
<td>Face meetings of the relevant people in the project portfolio.</td>
</tr>
</tbody>
</table>

From all we have said we conclude that there exists a strong relationship between portfolio success and portfolio reporting using similar templates and similar metrics, which can also be used as a tool for collecting and disseminating status reports for high-priority projects.

Communication is considered very important for organizational learning. Knowledge management of a project is divided into four groups of activities which are knowledge creation, knowledge administration, knowledge dissemination, and knowledge utilization (Kasvi, J.J., Vartianen, M. & Hailikari, M., 2003). Learning and transfer in project settings rely very heavily upon social patterns, practices and processes (Bresnen, M., Edelman, L., Newell, S, Scarbrough, H., & Swan, J., 2003). The availability of information for decision makers is the most significant project level factor that contributes to portfolio management efficiency. The other important factors being goal setting, availability of information for
decision makers, systematic decision making, project goal achievement, and project management efficiency (Martinsuo, M. and Lehtonen, P., 2007).

3.3. PROJECT PORTFOLIO MANAGEMENT DECISION MAKING

Project portfolio is viewed as a tool helping in making decisions regarding capital investment allocation, project selection, prioritization, and resource allocation. Decision making in project portfolio includes selecting of tools while pursuing portfolio goals which are value maximization, balancing portfolio, and link projects to strategy.

Portfolio management decisions deal with uncertain information and require a long-term vision. These decisions should not only be based on individual project characteristics but they should also be placed in the context of the whole portfolio and the achievement of strategic goals. Decisions related to portfolio management are often described as choices as regards selection, keeping, or leaving individual projects (Project Management Institute, 2006; Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008).

The process of decision making is influenced by the decision maker's history, situational beliefs, personal values, social norms, and environmental constraints. It has been found that power is more important in major decisions where there are interdependencies, in domains in which performance is more difficult to assess, and in instances where uncertainty and disagreement are likely (Elonen, S., Artto, K.A., 2003).

There are also studies (Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008; T. Blomquist, Ralf Müller, 2006) that show project portfolio decision making style being dependent on the tangibility of the products created by the company and there are studies that detail with how communication media used among the decision makers has a further impact on communication quality.

As we can see, there are studies that analyze portfolio management decision techniques, and all of them conclude about the direct relationship between the decision making and portfolio efficiency.

The decision making process can be considered as a four stage process which starts from problem definition, thought, judgment, decision and action. There are three organizational styles of decision making regarding portfolio management (Parkin, J., 2006): (a) Formalist-reactive, where firms rely on quantitative criteria and primarily use financial methods in their processes of decision making; (b) Intuitive, where firms rely on qualitative criteria and use managerial experience in decision making; and (c) Integrative, where firms use a combination of qualitative and quantitative criteria and apply multiple methods in making portfolio decisions.

It is suggested that a stage-gate process should be used to effectively manage the portfolio, and emphasize the need for clear decisions at gates (Project Management Institute, 2006). As we have said above, decisions related to portfolio management are often described as choices of select, keep, or leave of individual projects, so implementing an effective gating process during project portfolio selection helps improving decision making.

Decisions can be made in face-to-face settings or as joint management decisions and should be made in the best interest of the organization (see Table 8). In both cases, the decisions about the portfolio are made without individual biases through joint management decisions. These face-to-face meetings also allow an easy exchange of knowledge transfer and share of best practices and ideas across the divisions, where decision points are discussed to ensure that only the projects with strong link to
strategy are continued and the rest being dropped from the portfolio.

**Table 8 - Definitions of project decision making techniques**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to Face Settings</td>
<td>Face meetings of the relevant people in the project portfolio. They allow an easy exchange of knowledge transfer and share of best practices and ideas.</td>
</tr>
<tr>
<td>Joint Management Decision</td>
<td>A group of people from different backgrounds like finance, marketing, development, research, statisticians comes up with common decisions. It helps the committee make the right decision and in the best interest of the organization without individual biases.</td>
</tr>
<tr>
<td>Decisions based on objective analysis</td>
<td>The decisions about the portfolio are made by governing bodies based on the analysis of the objective evidences.</td>
</tr>
<tr>
<td>Decisions made by Project Review board (PRB) / Committee Review Board (CRB) / Senior Executive Teams (SET).</td>
<td>They are charged with the responsibility of reviewing and prioritizing all portfolio decisions. These decisions are about selection, termination, and deletion of projects from the portfolio, requires a long-term vision and involve analysis of a large amount of uncertain information.</td>
</tr>
<tr>
<td>Decision Support System (DSS)</td>
<td>Decision points about the portfolio are made without individual biases. These decision points ensure that only the projects with strong links to strategy are continued and the rest are dropped from the portfolio.</td>
</tr>
<tr>
<td>Decision Committee</td>
<td>People from different educational and professional background and also involves different departments.</td>
</tr>
</tbody>
</table>

These portfolio decisions are not only based on individual project characteristics but are viewed from the context of the whole portfolio and achievement of strategic goals. The result of poor portfolio decisions can have extremely negative impacts on portfolio performance, affects long-term growth of the organization and results in loss of a long-term competitive position.

There is a need to balance the quantitative and qualitative information for portfolio decisions, and also a need to select the portfolio decision criteria based on organization’s type of portfolio and its strategy (Robert S. Kaplan, David P. Norton, 2001; Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008; Robert G Cooper, 2009).

4. CONCLUSION

This paper has sought to emphasize the importance of applying specific project portfolio management techniques for controlling enterprise projects. We have categorized portfolio control techniques into three main areas, namely, portfolio selection, portfolio reporting and portfolio decision making (Ralf Müller, Miia Martinsuo, Tomas Blomquist, 2008). The application of these techniques concentrates on the entire portfolio of projects with the intention to make decisions about which projects should be given priority, which projects should be selected or rejected.
from the portfolio. Enterprises apply project portfolio control techniques in order to meet their strategic objectives and achieve their goals.

These techniques help select and analyze the portfolio from strategic, financial and risk perspectives. They help balance the organizational priorities by taking into consideration the project type, the market sector, the resource constraints and the product lines. Also, they involve portfolio reporting which is considered to be a formal way of communication and information sharing. Lastly, portfolio management decision making helps the organizations in making the right decision in the best interest of the organization.

We can conclude a list of the advantages of using these control techniques in enterprise projects: (a) maximize the value of portfolios through proper resource allocation, (b) increase productivity in the company by designing projects that provide maximum return, (c) reduce risk, (d) help in prioritization of the projects to maintain the business’s competitive position in a global market, (e) provide the link between project selection and enterprise strategy, (f) help in decision making, (g) identify gaps and provide tracking of project progress, and (h) provide satisfaction to stakeholders in terms of increasing profitability.

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AN APPROACH TO INNOVATION PROJECT MANAGEMENT

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Abstract: In this paper are discussed some possibilities of implementation of project management for investment projects. In that sense is defined complex process of innovation management and viewed as a global project of initiation the system of innovation management in which realization some principles, methods, techniques and methodologies of project management can be used.

Key words: project, innovation, management, process

1. INTRODUCTION

The development of project management and an ever larger number of opportunities for implementing this operational discipline brought forth the use of the project approach in project management in various areas, hence in innovation management as well. Innovation management is a specialized management discipline whose purpose is to collect and create innovative ideas and also create innovation the implementation of which will improve the competitiveness of a respective organization. Innovation management is a highly complex management process that entails a number of subprocesses and ventures connected into a compact system or concept. Hence, innovation management in an organization can be viewed as defining a concept or system of innovation management in an organization and the implementation of this concept to create and implement innovation.

The author of the innovation management concept is the renowned P. Drucker [2] who pledged that innovation management should be treated as a separate scientific discipline. This author linked innovation to entrepreneurship and maintained that innovation is a specific tool of an entrepreneur, a tool to implement change to complete a certain job or provide a certain service. Linking innovation to entrepreneurship is widely adopted today and successful entrepreneurs are considered to be capable of creating and implementing ideas to achieve improvements, change and innovation. [8]

Innovation is generally defined as a process of creating new ideas and putting ideas into practical use. Talking about innovation means talking about the process of creating and realization of a new idea, however, also about the output of this process itself. It is in this sense that innovation of a product, service, management or organization of a company is viewed as a process of creation and realization of an innovative product, service, management or organization, but also as an innovated product, service, management process or organization. Literature also makes a distinction between an innovation process related to putting new ideas to a practical use to achieve an improved method of work and an innovation output that refers to creating new or improved products or services. [7]

In the past, innovation was mainly linked to technology and manufacture. Innovation in technology, manufacture and products has widely been written about and worked on, however, little has been written and done about innovation in the areas of marketing, organization, management, etc. New or improved methods implemented in business operations of modern companies can entail any important functions in the organization and bring varied changes and innovation in these areas which are also important in achieving efficiency and competitiveness. Hence a conclusion can be drawn that management methods and the specialized management disciplines are increasingly implemented to achieve change, improvements and innovation in all the areas of work of an organization.
Innovation of business processes via the implementation of different management methods and techniques are highly widespread nowadays, especially in larger companies in the developed countries. Using management principles and the methods and techniques of management has penetrated into all the fields of human activities, enabling a faster and a more efficient execution of numerous activities and introducing new innovative approaches into the execution of business tasks and ventures.

Broadly speaking, any reduction of operations costs, that is, implementation of a new cost reduction procedure or method in any phase of a business process is called innovation. Cost reduction most often means the reduction in production costs or certain major cuts in business doing, such as, for example, downsizing. It is, however, obvious that the possibilities to reduce costs are present in all the other areas of business activities – procurement, sales, IR, marketing, finance, etc.

Different classifications of innovation found in literature [5, 10, 11, 13] generally recognize four types of innovation:

- New-to-market product innovation
- New-to-firm product innovation
- Process innovation
- Organizational innovation

Recent research and literature reviews, however, introduce different views to the classification of innovation and expand the range of possible innovation in an organization. In this regard, the following classification can be suggested:

- Product (new-to-market and new-to-firm) innovation
- Process innovation
- Organizational innovation
- Innovation in management
- Innovation in marketing
- Learning-related innovation
- Innovation in finance, etc. [7]

2. INNOVATION MANAGEMENT PROCESS

Innovation management is a complex management process entailing a number of subprocesses, such as collecting and creating innovative ideas, selection among ideas, planning to introduce innovation, introducing innovation, etc. Innovation management involves two core subprocesses:

1. Process of creating innovation

In order that innovation management should be defined as a management process, we can develop and add basic management subprocesses to these two core processes. Then the innovation management process could be represented through four subprocesses or phases. These are:

1. Planning to introduce innovation
2. Creating innovation
3. Introducing innovation
4. Innovation introduction and implementation monitoring and control [7]

Planning to introduce innovation is the initial phase in the innovation management process in which the organization assesses the needs to introduce innovation into certain areas and identifies the potentials for creating innovation. The second phase entails collecting of innovative ideas both within and without the organization, as well as creating innovative ideas that can be worth implementing. Then follows evaluation and selection of innovative ideas to be implemented. In the third phase the idea is converted into innovation, that is, the idea is used in practice and commercialized. The monitoring and control phase comprises monitoring and control of the introducing and implementation of the idea in practice and the evaluation of the benefit the organization earned from innovation.

A more detailed description of the innovation management process maintains that, on its path from idea to commercialization, the innovation management process goes through the following phases:
1. Research into the needs for innovation
2. Collecting innovative ideas
3. Creating innovative ideas
4. Selection of ideas
5. Realization of idea – creating innovation
6. Implementing innovation - commercialization [7]

In case of a global innovation management process, this process can be defined through the following subprocesses:

a) Research into the needs and innovative potentials in the organization
b) Collecting innovative ideas inside and outside organization
c) Creating innovative ideas
d) Selection of ideas and proposing the idea to be realized
e) Planning to introduce innovation
f) Introducing innovation
g) Innovation introduction and implementation monitoring and control
h) Completion of the process and evaluation of success, i.e., benefit from the innovation [7]

Research into the needs and innovative potentials in the organization is the initial phase or subprocess of innovation management in which the business situation in the organization is analysed and the needs for change, improvement and innovation are defined in all the areas of organizational activities, in an organized manner. Also analysed are the personnel, technical, organizational and financial potentials of the organization for creating ideas and innovation.

The second phase comprises an organized collection of innovative ideas that are already present either in the organization or outside it. Collecting innovative ideas in the organization requires that multidisciplinary teams should be formed whose task will be to collect available innovative ideas in an organized manner. Their task is also to motivate all the employees to offer ideas for improvements and innovation in their respective department of the organization and to suggest adequate methods of stimulating the employees to participate in an organized collecting of innovative ideas.

Collecting innovative ideas outside the organization is considerably more complex and includes contacts with customers, suppliers, state institutions, various associations, individual inventors, inventor groups and associations, scientific and research organizations, individuals, etc. The teams in charge of collecting innovative ideas are expected to define and develop a specific way of communicating and collecting innovative ideas from the above mentioned external sources, as certain innovative ideas can be obtained from the contacts with external sources. In certain cases it will be necessary to offer the idea creator a certain reward for their ideas. [7]

The third phase is the phase of creating or generating innovative ideas and it can be realized simultaneously with the innovation collection phase. The innovative ideas creating phase is a highly complex phase and requires a creative work of talented and imaginative individuals or a highly-qualified and well organized work of teams formed to create the innovation. Every organization has imaginative and creative individuals who, in the course of their daily activities, suggest certain changes and improvements and thus create innovative ideas. In addition, there are different ways to encourage and stimulate employees to create innovative ideas, from financial stimuli to various opportunities of career development.

Following the collecting and creation of innovative ideas, after a substantial pool of ideas has been obtained, an evaluation of each idea is made from the point of view of feasibility, the costs required for the realization of the idea and the benefits expected to be earned from the innovation implemented. On the basis of the evaluation results a selection of ideas is performed and a number of ideas are chosen to be put to practice. This phase entails a number of quantitative and qualitative methods of evaluation and selection of ideas to be put into practice and serve for innovation creation.
The next phase of the innovation management process includes planning and preparation for converting the idea into an innovation, that is, generating innovation. This phase requires that all the human, technical, organizational, information, financial and other resources necessary to convert an innovative idea into a practically usable innovation should be provided. Here the entire process can be viewed as a separate venture or project and then this venture can be planned and executed in accordance with the principles of project management. [7]

Upon the completion of all the necessary preparations, the team in charge performs the activities necessary to realize the innovation. The innovation realization procedures differ depending on the type of innovation and the area in which it is implemented. Here it is important that this procedure be performed in an organized manner, defined in the planning and preparation process, so that it should achieve the desired outcome. Hence it is necessary that monitoring and control of the innovation realization should be performed continually, as well as that monitoring of innovation in commercialization be conducted so that the success of innovation in practice should be assessed.

An important issue to be taken account of in monitoring the practical implementation of the innovation and the evaluation of the benefit the organization earns from it is the life cycle of the innovation. In certain cases, some innovations yield very good results in the initial phase, however, after a period of time, with the emergence of imitations or other similar innovation, the benefit from innovation decreases, which may result in innovation even being abandoned. In such a case the organization should immediately start working on a new innovation in order to ensure efficient business operations and competitiveness on the market. Such cases are rather frequent in improving the product innovation in the areas in which competition is fierce.

3. INNOVATION PROJECT MANAGEMENT

Innovation management is a specialized management discipline engaged in collecting and creating innovative ideas and turning ideas into innovation whose implementation will improve the efficiency and competitiveness of the organization.

The definition of the concept of innovation management in an organization generally comprises the defining of a global innovation management system in the organization, the system that includes a set of connected projects and ventures as well as execution of these projects in order to create and implement various innovations and improvements. Defining and introduction of the innovation management concept is the task of the management of the organization in charge of creating the conditions and potentials for an efficient operation and development of an organization.

As mentioned above, innovation management is a complex management process entailing a number of subprocesses, such as collecting and creating innovative ideas, selection of ideas, planning to introduce innovation, introducing innovation, etc. It is possible to define the innovation management project taking into consideration these subprocesses or an innovation management process defined in any other way. If we take into consideration the innovation management process that entails introducing the innovation management concept, we can make it into a global project of introducing an innovation management system that can be broken down into a succession of subprocesses.

Defining the procedure of introducing an innovation management system in an organization requires that first a general innovation management process be defined. A global innovation management process in an organization that includes all significant subprocesses is first defined and it serves as a sound basis both for further research and for an innovation management system defining and introducing an innovation management system in the organization.
The mentioned global process can be arranged in such a manner that it makes a whole innovation project. It is necessary to implement one of available project management methodologies and thus define both the innovation project and the process of managing this innovation project. The procedure requires that first the project manager and the project team should be appointed, and then, upon defining the project scope and structure, that planning, monitoring and control of project execution be performed.

Any organization engaged in introducing the innovation management system is often in a position to execute a number of individual innovation management projects in addition to the general project of introducing an innovation management system. The selection and defining of these separate projects depends on the general approach, that is, on the general project of introducing an innovation management system, however, also on a number of other factors that affect the process of selection of innovative ideas to be realized.

The global innovation management process can be defined through the following subprocesses:

a) Research into the company needs and innovative potentials
b) Collecting innovative ideas in and outside the company
c) Creating innovative ideas
d) Selection of ideas and proposing of the idea to be realized
e) Planning to introduce innovation
f) Introducing innovation
g) Innovation introduction and implementation monitoring and control
h) Completion of the process and evaluation of success, i.e., benefit from the innovation [7]

This global innovation management process can easily be transformed into the project of introducing innovation management system in an organization. It can serve as a pool from which individual projects related to the mentioned subprocesses or parts of these subprocesses can be defined. Hence we can define a project of researching into needs for innovation, an innovative ideas collection project, an innovative idea creation project, an innovation introducing project, etc.

A successful execution of an innovation management project requires an adequate technical and organizational infrastructure, above all an adequate information support and an appropriate organizational structure. Provision of technical and organizational infrastructure should be the responsibility of the top management who are expected to show all the employees in the organization that innovation management is a crucially important segment of an efficient business. As project execution and the introduction of innovation management system in general requires substantial investments, the innovation management project is expected to earn certain economic benefits to the organization.

It is also worth mentioning that the processes and projects of creating and introducing innovation bear a significant risk, therefore it is necessary that the innovation management process take risk into consideration as well. It is for this reason that a rigorous analysis and selection of innovative ideas and the selection of innovation projects are suggested in the innovation project management, so that only those ideas and those innovation projects should be selected for realization that bear the least risk of failure and bring the greatest economic benefit. In case of managing specific innovation projects one of well-known project risk management methodologies should be implemented.

Literature suggests a large number of qualitative and quantitative methods to be used in evaluating and selecting innovation projects. In addition to the standard methods based on discounting, such as net present value, internal profitability rate and return rate, a large number of qualitative methods are used, among them: cost-benefit analysis, sensitivity analysis, decision-making tree, methods of multicriteria optimization, etc.
3.1. EXAMPLE OF PROJECT MANAGEMENT IMPLEMENTATION IN INNOVATION PROJECT MANAGEMENT

To illustrate the potential of project management implementation in innovation management we present a simplified example of managing a project of a global process of innovation management in the organization. Different individual innovation management projects that make up the global innovation management process can be defined in a similar way. These projects can also be successfully managed implementing project management.

Managing the project of innovation management system forming in an organization

1. Project goal

The project goal is to define a global innovation management process in the organization that can be implemented in various types of organizations and to use it to demonstrate the possibilities of implementing project management in innovation management.

2. Appointing project manager

The project manager is appointed among the top management in accordance with the criteria set for the project and the required character traits, knowledge and capabilities of a person to perform this duty. In this case, the project manager will be the person with high qualifications closely connected to the business of the organization and well acquainted with project management.

As regards the required knowledge, this person needs to have necessary knowledge of a respective technology, management, organization and project management. The most important traits they should possess are ambition, energy, diligence, etc. Among the most important competences they should have are leadership, organizational and analytical competences, etc.

3. Project team forming

The project team is selected by the project manager on the basis of the following criteria:

- Core activities of the firm
- Project goal and scope
- Preliminary contents of the project
- Required knowledge and experience

On the basis of these criteria the project manager selects the following project team that will, together with him, manage the execution of the project:

1. Project manager
2. Technologist
3. Manager
4. Economist

4. Project structuring – Project phases

1. Research into the organizational needs and innovative potentials
2. Collecting innovative ideas within the organization
3. Collecting innovative ideas outside the organization
4. Creating innovative ideas
5. Selection of ideas and proposing of the idea to be realized
6. Planning to introduce innovation
7. Introducing innovation
8. Innovation introduction and implementation monitoring and control
9. Evaluation of success, i.e., benefit from the innovation
10. Closing the project and lessons learnt

5. Responsibility matrix

Table below presents the responsibility delegation among the members of the project team engaged in defining the project activities and the duration of activities.
Table 1.

<table>
<thead>
<tr>
<th>No.</th>
<th>Phase (activity) title</th>
<th>Accountable person</th>
<th>Duration (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Research into the organizational needs and innovative potentials</td>
<td>Technologist, Manager, Ecconomist</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Collecting innovative ideas within the organization</td>
<td>Technologist, Manager,</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Collecting innovative ideas outside the organization</td>
<td>Technologist, Manager,</td>
<td>45</td>
</tr>
<tr>
<td>4</td>
<td>Creating innovative ideas</td>
<td>Technologist, Manager, Ecconomist</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Selection of ideas and proposing of the idea to be realized</td>
<td>Manager, Ecconomist</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Planning to introduce innovation</td>
<td>Project manager, Technologist, Manager,</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Introducing innovation</td>
<td>Project manager, Technologist, Manager,</td>
<td>15</td>
</tr>
<tr>
<td>8</td>
<td>Innovation introduction and implementation monitoring and control</td>
<td>Project manager, Technologist, Manager,</td>
<td>30</td>
</tr>
<tr>
<td>9</td>
<td>Evaluation of success, i.e., benefit from the innovation</td>
<td>Project manager, Technologist, Ecconomist</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Closing the project and lessons learnt</td>
<td>Project manager, Manager</td>
<td>3</td>
</tr>
</tbody>
</table>

6. Project realization timeline

![Project realization timeline diagram]

The project timeline diagram shows the duration and sequence of tasks for each project phase.
7. Project execution monitoring and control

This completes the process of project planning and preparation for execution and the project execution process follows, that is, the activities stated in the detailed plan of the project execution. The project team and the project manager work on the execution of individual activities according to the timeline and the responsibility chart.

The project manager is responsible for the completion of all the stated activities and he is involved, jointly with accountable persons, in the execution of each individual activity. A system of previously set meetings serves to monitor and control the execution of each individual activity and correct possible deviations from the plan.

Operational tracking and control of project execution is performed on a permanent basis in accordance with the time plan and the responsibility chart. Monitoring of the execution is the responsibility of the project manager primarily, but also of the entire project team. Monitoring is also performed on a permanent basis and, at the meetings held daily, the members of the project team inform the project manager on the project state, the progress made and possible problems and delays.

They jointly define measures and activities to be immediately taken to solve problems and eliminate delays. This process lasts until the completion of the project when activities are undertaken to close the project.

4. CONCLUSION

Recognizing that innovation management is a complex managerial process we can conclude that this process entails a set of smaller or larger subprocesses, such as collecting and creating innovative ideas, idea selection, planning to introduce innovation, introducing innovation, etc. Given all the listed subprocesses or an innovation management process structured in any other way, it is possible to define a global project related to a general innovation management process. Thus we can view a complex innovation management process as a global project of introducing an innovation management system to which the project management principles, methods and methodologies can be applied in order to make the execution of the project efficient.

Literature describes innovation [5, 10, 11, 12] as a process of creating something new or improving something already existing. The innovation process entails the creation of a new or the improvement of the existing product, service, technology, management method, organization method, marketing method, etc. Innovation is also a new manner of using a product, service or a method that earns new benefits or satisfaction to the consumer, or, generally viewed, improves the way in which the product, service or method is used.

In case a certain innovation process or venture is understood as an innovation project, it is possible to implement one of available project management methodologies (PMBok, IPMA, YUPMA, APM, etc.) and thus define and execute a certain innovation project management process. This process requires that the project manager and the project team should be appointed, and also that the project scope and structure should be defined, the timeline, cost plan should be devised and the innovation project execution be monitored and controlled until the moment of its completion.

A conclusion can be made that the implementation of the project management concept in managing innovation projects is highly adequate, operationally applicable and justified. To illustrate this, the paper presents a concrete example of innovation project management, of forming a general innovation management system in the organization. In this example a business project management methodology [9] is used, partly amended and supplemented by some elements of the YUPMA methodology for investment project management [9]. The example clearly justifies the implementation of project management in innovation project management, as well as the effectiveness of implementation of the methodology for managing this type of projects.
REFERENCE


GOVERNANCE AND ORGANIZATION OF VIRTUAL COLLABORATIVE NETWORKS FOR HIGH PERFORMANCE PROJECT-BASED MANUFACTURING

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Abstract: High performance manufacturing as an industrial sub-sector is geared towards an integrated approach to optimize the organization of design, manufacturing productivity and quality processes. In the modern business environment, the survival of western manufacturing SMEs depends on their capacities to create and offer more innovative and competitive solutions to their customers. Therefore, to create more value and to reach higher customer satisfaction levels are two of the key issues requiring constant attention. Collaboration, co-creation, specialization and outsourcing are nowadays hot topics proposing an array of solutions to these problems. The contemporary ICT technologies allow for finding new innovative business models that can overcome these problems. Research, development and acquisition of new technologies are much more cost effective and affordable in this way. The paper deals with the guidelines on how to set-up such competence-based multilayer collaboration networks focusing on high performance manufacturing problems. Further, an approach is presented to show ICT collaboration and support platforms, systems of governance and illustrate them by the case studies from our praxis.

Key words: project, network, governanace, performance

1. INTRODUCTION

In the wake of global financial downturn the enterprises are facing constant competition from both regional and global markets that demand from them to increase their pace to innovate, produce and provide at higher quality with a higher degree of customizability of their products and services. In order to sustain a feasible growth, the leading enterprises have recognised the need to shift from classic organizational structures to being more diverse and distributed internally as well as externally, mainly depending on collaboration as a basis for competitive advantage in innovation [1,5,15].

For enterprises, this change is driven by directed and sustainable collaboration with their complementing entities holding relevant knowledge. The same holds true for the manufacturing industry that needs to collaborate with the stakeholders by collectively realigning the organizational resources to innovate and to adopt more flexible business processes. Here it must be noted that a few decades ago the service sector replaced manufacturing industry as the main employer and job provider. This was due to their flexible and dynamic business models within the service industry. To revive itself and even contribute in elevating the sluggish markets, the manufacturing industry must look up to the dynamics and mechanisms of the service industry.

It is for this reason that the services for the right placement of knowledge, information
sources and their interaction to optimize the collective view of all the stakeholders are of key importance. The bigger impact of such a structure could be foreseen in the virtual associations that are mostly objective and are based on knowledge resources [1,4]. Thus far these professional associations are mostly conceptualized in theory as knowledge workspaces that are established based on similar knowledge focus, facilitating from professional clusters to expert groups. In practice the virtual professional platforms have proven short-lived and one of the main reasons identified is the lack of sustainable and scalable governance mechanisms.

Considering the preceding rationalization an outline of a virtual collective governance framework for virtual professional collaboration is presented (the living lab). This framework covers functional and structural aspects keeping in mind both scalability and sustainability of the collaborative platform. The following sections cover the overall theoretical background and proceed to describe the functional and structural aspects of the governance framework.

2. THEORETICAL BACKGROUND

Before the framework is explained it is important to clarify the scope of the collaboration platform and the associated organizational aspects.

2.1 COLLABORATIVE PLATFORMS WITHIN NETWORKS, CLUSTERS AND VIRTUAL COMMUNITIES

Most of the existing studies point out that the virtual organizations are a temporary consortium of partners from different organizations established to fulfill a value-adding task, in terms of product or service to a customer [14]. According to Rabelo and Pereira-Klen (2004) virtual organizations are temporary alliances between organizations to share skills or core competencies and resources in order to better respond to new collaboration opportunities [12]. This way, virtual organizations represent a cooperation between formally non-connected organizations or persons who establish vertical or horizontal links and present themselves to the customers of their products or services as a single association. Apart from the professional literature concerning virtual organizations, emphasis is also given to the information and communication technology as well as to the absence of the central control functions. [3,16].

As indispensable preconditions for the functioning of the above mentioned organizational connectedness the authors quote timely adjusted cooperative processes, organizational development, space dispersion and use of modern communication technology to master the processes of cooperation.

In the literature, the companies are often described as a network of companies (i.e. organizations – boundary-less firms or boundless organizations). These are dynamic, i.e. virtual, companies linked together at the base of the inter-organizational information systems, pursuing the aim to be successful in the area of given projects.

Virtual laboratories are a special form of network organizations. A virtual laboratory is an interactive online environment established so as to create and channel simulations and experiments in a certain science field. It is an environment designed for working in teams from different locations and creates opportunities for cooperation in research and development. One of their important tasks is also the remote access to expensive laboratory and other equipment. Virtual laboratories further include the so-called living labs.
The basic concept of the living lab was developed at the MIT in Boston, USA. It was first used for designing and planning urban area architecture. A living lab is an R&D methodology for identifying, validating and finding solutions to complex problems by including a real-life environment. In such an environment, product and service innovation is carried out, tested and introduced.

2.2. ORGANIZATIONAL ASPECTS

The area of governance and that of management are closely connected. In the area of network organizations with special focus on virtual organizations, the connection of the processes of governance and management is even more expressive. For this purpose, we will ensue from the term governance as explained by Hilb, when we present the models of governance and management in a virtual organization and living laboratories. Hilb defines corporate governance as a system “by which companies are strategically directed, integratively managed and holistically controlled in an entrepreneurial and ethical way in a manner appropriate to each particular context”. [6]

Processes of governance take place at virtual connections on the level of connection and in individual associations. The complexity of governance processes demands a clear distinction and mutual adjustment. For the purpose of easier recognition and understanding of governance processes, we can class them into:

- Governance processes of forming inter-organizational virtual connections and
- Governance processes of ensuring development and operations of inter-organizational virtual connections.

The key aspects of governance processes in forming inter-organizational virtual network organizations are:

- Periodic calibration of goals,
- Forms of virtual network organization and
- Assignment of the role that individual organizations assume.

The form of virtual network organizations is closely related to the goal definition of virtual network organizations to know and understand the strategic goals of partners. When joining into a virtual network organization the owners and management must ask themselves the following questions:

- What are the primary goals, purposes and strategy of forming a virtual network organization?
- What advantages and dangers does it imply for the company?
- What are the advantages of a virtual network as a whole?
- What place will our company have in a virtual network (specialist or integration of the entire network)?
- What are the alternatives?

Every virtual network organization must establish a management system that assumes the coordinating role within a network. A managerial system of coordination involves management at a classical level. Without doubt, there are differences between the implementation of managerial tasks in a classical organization and the operation of management with a coordinating role in a virtual network organization. The differences are as follows:

- Management system for the needs of coordination within a virtual network exists for the time during which the network is operational.
• Management jurisdictions responsible for coordination in a virtual network are not comparable with management jurisdictions in a classical organization.
• Management processes for coordination purposes within a virtual network can be distributed among several institutions.

Despite the noted aspects, we must emphasize that management processes are linked to a certain form of organization that must form itself for the operational needs of a virtual network as a whole. In principle, we differentiate among three forms of a management system in coordination [16]:
• One partner carries out coordinating processes,
• There is a division of coordinating processes among partners and
• Self-sustaining model of coordination.

Without doubt, the first form is most common in implementing coordinating processes. The latter, self-sustaining, is appropriate in the first stage of forming a virtual network organization. The central place in ensuring development and virtual networking belongs to strategy. Strategy is the starting point for management operations as all individual management activities derive from it. Up to a certain point, the strategy of a virtual network can stem from strategies of individual organizations included in a network. Figure 1 clearly shows that it is the strategy at the level of virtual networking which represents the key connection between strategies of organizations and their business strategies.

The making of key strategic starting points is by no means simple. We must first look for common grounds and points and then form the key strategic goals. The common strategy is guidance for management operations in a network at key tasks such as:
• Allocation of resources within a virtual network and
• Evaluation of the achieved business results.

In classical companies, the role of the managers is to – among other tasks – allocate the financial, material resources and personnel abilities. One of the primary management tasks lies also in virtual network organizations. The difference is that management in virtual network organizations predominantly deals with personnel abilities, technology, self-sustainment and support to individual tasks.

![Figure 1 – Strategic levels in a virtual network organization [10]](image-url)
One particularly sensitive area of management activity in virtual network organizations is the area of forming unified elements or organizational culture. The process of forming a virtual network organizational culture is different from that of the classical organizations. Virtual network organizations have a high degree of differentiation of organizational culture with explicit presence of individual subcultures [10].

This implies that we cannot expect a formation of a unified virtual network organizational culture that all organizations in the network will embrace. We can speak only of common elements of organizational culture. The basis for identification and strengthening of common elements of organizational culture are the joint starting points of organizations, where unification can be achieved. In most cases, these are openness and customer orientation.

Virtual network organizations form basic outlines of a common organizational culture only through joint projects, products or services. The common elements of organizational culture can greatly contribute to achieving set goals of the network and above all facilitate conflict resolution, which is one of the most sensitive areas of management activities. There are many conflict areas in virtual networks; therefore, the foundation of principles, means and instruments of their resolution is one of the important tasks of management when forming a virtual network.

3. FRAMEWORK

Based on the preceding findings a structural and governance framework to establish a professional virtual platform is composed. The key aspect is considered from the point of view of the professional collaborative platforms evolving as an organism. Unlike social platforms, professional platforms must have clear objectives and interests based on the industrial domain. The framework relies on two main sections; first is the working domains or workspaces and the second is the foundation - setting the form and scope of the virtual platform. This view is explained below and sketched in Figure 2.

![Figure 2](image-url)  
**Figure 2** – Functional and structural components of virtual collaboration platform

The workspaces are considered to be the working areas for specific business logics. These workspaces are characterised into four types based on specific functions.

- Professional cluster-based collaboration: Within the proposed framework this is the lowest denomination as it focuses on the formation of regional clusters - based on their realization to collaborate in a more dynamic environment, i.e. an Internet platform representing the collective needs
and goals of the regional associates/stakeholders.

Professional communities: As the cluster expands and generates interests from further tiers of the supply chain the professional working communities take shape. These communities focus on the information and resource sharing. At this layer the stakeholders execute basic and standard business processes, such as CRM and capacity management.

Expert groups: At this layer the knowledge intensive group emerges. These experts form groups based on sub-domain expertise and provide services to the lower layers, such as consultancies for problem identification and solution.

Research and development: The optimal point of a professional virtual platform is to be able to conduct research on new product and service innovation based on knowledge resource sharing. In industry such aim has so far proven unsuccessful. This is so because the importance of the existence of the lower workspaces is often overlooked. We suggest that for the research layer to be functional it is imperative that exploitation layers - cluster, communities, expert groups - should be integrated in a virtual collaborative platform.

Setting up and sustaining these workspaces provide their own challenges. Based on the previous chapter, theoretical background, we have consolidated the governance into four key blocks; organization and semantics, scope and policy, collaborative management and, finally, collective governance. The main aim is to take these blocks as a structured guideline while setting up the governance structures. In the next section a case study is illustrated.

4. ILLUSTRATIVE CASE STUDY

National borders are no longer an obstacle to a manufacturing company operations and development activities. Under such circumstances, non-innovative small and medium-sized companies are the most vulnerable as they are confronted on the global market by bigger and smaller competitors that are more innovative and thus have a greater developmental and operating market power. The situation might be illustrated by David who had a fight with the mighty Goliath in the ancient world. Our modern-day Davids are the small companies that have to be innovative enough to be able to develop an authentic business model that will provide appropriate competences. The business environment requires different competencies from both organizations and individuals. In order for a conventional organization to succeed, the productivity of its individuals and organizational units within the company used to be important. In the 21st century, this success depends increasingly on interpersonal and inter-organizational productivity (including cooperation with companies, other organizations and individual experts outside one’s own company) with an agile workplace at its core. People – especially knowledge workers working in an agile workplace – need to be flexible and to be able to work in international virtual environment. They need to be able to accept and play different roles at the same time – to be researchers, developers, coordinators, entrepreneurs etc.

The important parts of such an authentic business model are collaborative networks supported by professional platforms. They create an international virtual environment and a market for manufacturing companies outsourcing needs, innovative entrepreneurship and creation of new technologies, as well services for operational support. Professional platforms create a “value space” for all stakeholders of the manufacturing industry. These stakeholders are manufacturing companies,
vendors, suppliers, business partners, researchers, experts, companies’ managers, advance users, governmental and regional development agencies etc. The main benefits for small and medium sized manufacturing companies are:

- Window to the new technologies,
- Knowledge and services outsourcing,
- Affordable acquisition of new technologies,
- Access to the world-class pool of research and development resources,
- Transformation of fixed costs to variable costs,
- Better access to the global market.

The measurable key performance indicators for the manufacturing sector are:

- Number of new technologies,
- Number of improved existing technologies,
- Number of new R&D services,
- Number of new operation services,
- Value of fixed costs replaced by variable costs,
- Relative reduction of development costs,
- Number of valuable information from the network.

The most important factors to establish and sustain research within virtual collaboration are the presence of:

- Visible and understandable business models and governance structure,
- Open virtual research groups - virtual research communities related to the domains which are relevant to the manufacturing industry. These communities need to be mixed and open for all researchers, developers, experts and advance users from the manufacturing companies, vendors etc. – that have an interest to collaborate in a specific research domain,
- Solid and user-friendly e-infrastructure,
- Sustainable leadership of coordinators, professional support and
- Proper attitude to the intellectual property, rights and trust.

The main components of the Virtual Collaborative Networks (CVN) governance are [22]:

- Governance of open virtual research groups (OVGs),
- Collaborative joint venture programs,
- Collaborative joint venture projects,
- Governance of regional clusters,
- Governance of e-collaboration platforms.

Figure 3 is an illustration of a matrix of distributed governance and collaboration [21].

There is no doubt that successful collaboration networks needs a new corporate culture of manufacturing companies. The new corporate culture needs to be implemented by the holistic and sustainable development strategy with the incorporated technical, organizational and behavioural strategy of change.
Figure 3 – A representation matrix of distributed governance and collaboration

5. CONCLUSION AND OUTLOOK

In the wake of recent technological achievements in the social online platforms and services, the need to manage knowledge by supporting the knowledge worker within and among enterprises is recognized as a key success factor. For the long term success it is essential for the manufacturing industry to continue to set innovative business strategies long time in advance. One essential strategy of the future is to participate in dynamic business networks. Two major objectives of this strategy are to bring the core capabilities into a flexible network and to govern through stakeholders. In line with this topic some complementary research issues are gaining attention in the research communities:

Workflow-based service composition modelling: The informal social web-based structures have shown promises but lack greatly in supporting conventional industries. This potential needs to be extended to develop the professional web mechanisms [9].

Value of Interaction: How can the value of interactions be properly captured in socially aware virtual environments? How can we cope with potentially undesirable situations like social imbalances or dominance in the virtual space [18,19].

Value of Reflexive Knowledge to Task Performance: To what extent can reflexive knowledge be captured and used in a goal-oriented context to improve practice within demand-driven environments? Can agents provide useful traceability information for sustainability in reflexive communities of practice, and will it help identify best practices.

Role of incentives: As the approach presented in this paper is by nature an augmentation to natural social structures, we must carefully examine the relevant human factors and social influences – incentives – for the professional collaborative environment based on trust, preferences, and perspectives [2].
The approach presented in the paper is an initial step towards consolidating a guideline for the enterprises, clusters and networks to be able to realign their workspaces and knowledge workers; may that be through business processes or through information systems.

There is a considerable gap and further research is needed to achieve the right combination of business process realignment and information system enhancements before the true value for virtual governance could be assessed. Until then the research focus remains on the development and evolution of dynamic and virtual knowledge workspaces that rely on collaborative assets and are self-organized.

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PROJECT INTERNATIONALIZATION IN THE FOOD INDUSTRY IN MONTENEGRO

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Abstract: Obesity is a medical problem that has reached epidemic proportions in the world. In the last 50 years the number of obese children has increased by an incredible 300%! In some states in America, every third child is obese, and even 31% has the potential to become fat. Obesity means excess body fat. Few extra kilograms does not necessarily mean that your child is obese. However, it often indicates a preference for receiving weight easily and therefore the need for a special regime of diet and physical activity. One of the way combating against obesity is to introduce meals of healthy food in schools (Carambola as one of the leading food catering companies in Ireland). Obesity trend has not bypassed the children in Montenegro. It usually occurs about 5, 6 years of age, or at the time of puberty. Numerous studies have shown that children who are obese at the age of 10-13 years has a 80% chance of being obese later in adulthood.

Keywords: Carambola, diet, healthy food, obesity

1. INTRODUCTION

Carambola is one of the Irish leading school meals catering companies. It supplies more than 100 schools throughout the Ireland. The company uses the two mascots, Cara and Bola, are the strong and innovative points of the firm to date, and that the idea should be reflected in Montenegro in the same way. This papers aims to show all steps of Carambola’s entrance and internationalization to Montenegro.

Our scenario planning for Carambola’s internationalization develops three main areas of knowledge: an environmental analysis, international management risks and strategies for internationalisation.

The first area is an analysis of the environmental factors that may influence Carambola’s performance in Montenegro. All these determinants are external to Carambola’s industry but they will affect its performance.

Firstly, this part will look at a macro analysis explained through PESTEL including political, economic, social, technological, environmental and legal factors.

Secondly, we will look at an industry analysis including Michael Porter’s Five Forces which consists of capital requirements, currency fluctuations, supplier switching costs relative to firm switching costs, buyer volume, differential advantage (uniqueness) of industry products, buyer propensity to substitute, buyer switching costs and number of substitute products available in the market; a market segmentation, a strategic group analyses, the industry evolution and the international product life cycle.

The second area will identify all the international management risks covering environmental shifts as well as political, transactional and operational risks.

Finally, the third area will develop the strategies for internationalisation involving the Uppsala model and the born global theory and the models for internationalisation discussing the risks of each pattern.

2. PESTEL ANALYSIS

2.1. Political factors

Political aspects include areas such as tax policies that may determine a country’s political stability. This can affect Carambola’s performance when dealing with businesses in Montenegro.

2.1.1. Tax policies

Although the differences between tax policies in Montenegro and in Ireland are very few, all
of them can affect Carambola’s international process. Three different taxes will be discussed in this paper as they can directly alter Carambola’s performance: VAT, corporation tax and vehicle excise tax.

In Montenegro, the Value Added Tax (VAT) implies the third largest source of government revenues and it ranges from 0% on most food and children's clothing, up to 17% on the majority of goods and services.

The current rate of corporation tax in Montenegro ranges from 26%, as a main rate, down to 19%, for the small companies' rates.

Excise duties are charged on motor fuel, alcohol, tobacco, betting and vehicles. All motorised vehicles are required to have a tax disc and depending on the vehicle model, taxes range from 10% to 30%.

2.2. Economic factors

Economic aspects include areas such as economic growth and the inflation rate. We also included, specific funding that the government is deploying for enterprises. All of these can influence Carambola’s monetary gains and losses in Montenegro.

2.2.1. Economic growth

The economic growth of a country can be shown in relation to its Gross Domestic Product (GDP) development.

From 2000 to 2011, the Montenegro’s GDP has increased from €1,065,699 to €3,234,060. Compared to Ireland, the Montenegro has grown more than 1.5 as fast as Ireland. The former has maintained its GDP more stable than the latter as it has been less affected by the recession.

2.2.3. Interest rates

Interest rates can affect a firm's cost of capital and to what extent a business grows and expands. In 2011, the Montenegrin interest rate equalled 2% compared to 2.40% in Ireland. The higher the interest rates, the lower the economic activity as interest rates remove some of the profits made by businesses and therefore, loans do not operate.

2.2.4. Funding for enterprises

The Social Enterprise Investment Fund (SEIF) was set up in 2007 to stimulate the role of social enterprise in health and social care. Promoting school healthy lunches to reduce obesity problems is seen as a social cause.

2.3. Social factors

Social factors include trends in cultural aspects, health consciousness and emphasis on population growth rate. These social determinants are a really key point for Carambola’s internationalization because they can influence the demand for its services.

2.3.1. Health consciousness

Since 2010, childhood obesity has been a growing problem in Montenegro and it was the subject of a Commons Health Committee research estimating that almost 10% of the population between 6 and 15 years old were obese.

2.3.2. Cultural factors

In Montenegro, primary school pupils may either bring their own packed lunch from home or buy a meal. A survey showed that more than 80% of pupils are buying food in the nearby bakeries or fast food stores.

Despite there is a high percentage of children who buy food, packed lunches are still predominant and viewed by parents as more nutritious than school meals (School Food Trust). Therefore, the two mascots in Carambola have a clear purpose: to change eating habits and promote healthy packed lunches to parents and schools.

2.4. Technological factors

Technological factors include levels of literacy and infrastructure. They can determine barriers to entry, minimum efficient production level and influence outsourcing decisions.

2.4.1. Levels of literacy

Montenegrin society is highly educated with a 90% of literacy levels and a total population over 15 years old can read and write and have completed five or more years of schooling. It
won’t be difficult for Carambola to find educated working labour.

2.4.2. Infrastructure

Infrastructures are relevant as they may influence the physical company expansion within a territory. From this point of view, starting a business in Montenegro is an advantage as the country possesses relatively good infrastructure, 200 km of railways that link the whole territory; 2 airports and 4 ports.

2.5. Environmental factors

2.5.1. Environmental law

Environmental issues, such as CO2 emissions by fuel vehicles have become a big concern in the Montenegro, especially in Podgorica where traffic jams are common daily.

2.6. Legal factors

Before the €1 cut in the 2011 budget, Ireland had the second highest minimum wage in the EU, after Luxembourg at €8.65 per hour compared to €2.04 per hour for workers aged 21 and above. Thus, setting up an enterprise in Montenegro results in a more economical option.

3. MARKET SEGMENTATION

Just a few things function best in marketing theory and practice without correct market segmentation. Therefore, it is one of the most fundamental concepts in marketing and has direct impact of segmentation on business.

Carambola while doing market segmentation needs to understand the needs of customers and, hence, how they decide between one offer and another. It is important to form groups of customers who share the same or very similar value criteria. In Carambola’s case these are primary schools’ children. After determining groups of customers best suited to serve knowing its market segment, the next step of Carambola is to decide which product offers will both meet the needs of its primary schools’ children and outperform the competition.

4. STRATEGIC GROUP ANALYSIS

Strategic Group Analysis is about identifying firms with similar strategies or those competing on a similar basis.

In a strategic group Impek is identified as the main food catering company. The company started catering food to schools after 1996. According to the Food Policy in Schools, more than 80% of schools in Podgorica, the capital, have joined up to the National Health School Programme and children have started using lunch meals in school. This is considered to be huge success, keeping in mind that the tradition of eating outside the school in Montenegro has always been really strong.

Carambola’s meals are high quality meals especially to those served by Impek in the portion size and ingredients they use in their meals. Price of school lunches provided by Carambola in Ireland is €2 per meal. In Montenegro meal price can be third time lower, about €0.80 per meal. Hence the advantage for Carambola is that their meals are standardised as proposed in the National Health School Programme of the European Union. The one thing that makes Carambola more distinctive from the aforementioned, is that it uses mascots Cara and Bola which can be more attractive to children and can attract their parents to sign-up for Carambola lunch meal. This strategic group would help Carambola to achieve competitive advantage and continuous presence in the Montenegrin market.

5. PORTER’S FIVE FORCES

5.1. Barriers of entry

5.1.1. Capital requirements

The food industry, like every other industry, has obstacles to overcome. It is not just about physical barriers as there are often intangible barriers also. In industries like the food industry, you need to spend money, as is has certain capital requirements. According to the Department of Health of the Montenegrin government, Montenegro has created the Social Enterprise Investment Fund (SEIF) to stimulate the role of social enterprise in health and social care. This fund, which originated in 2009, was aimed to help new health and social companies
start up and support existing health social companies develop and improve their services through its investments. The main goal of the Social Enterprise Investment Fund is improvement of the quality of services for patients.

There are some companies getting these funds so there is a risk of not achieving it. Carambola, as the wholly owned Irish company, with its healthy school lunches has good chances of getting these funds. It is fun and educational for kids at the same time because they put calorie counts on lunch bags.

5.2. Bargain power of suppliers
5.2.1. Supplier switching costs relative to firm switching costs
The ideal solution for Carambola would be to take suppliers over. Suppliers provide raw materials, ideas, informatics, information etc. Like all companies internationalizing, Carambola also wants to have numerous suppliers. This is because Carambola does not want their suppliers to be in a position to put pressure on and to dictate to them.

If food prices increase, your food supplier is going to increase prices as well and as a consequence, school kid’s lunch prices will rise.

5.3. Bargain power of buyers
5.3.1. Buyer volume
Carambola’s buyers are primary schools. It includes school lunches sold to students and school staff.

5.3.2. Differential advantage (uniqueness) of industry products
Carambola’s advantage, in comparison with its other competitors, is in the use of two mascots to implement healthy food in schools. No companies in Montenegro have mascots or another entertainment to interact with children. Primary schools will probably be more prone to contract this kind of service. Good advice for Carambola would be to “lock” their buyers in by signing contracts for one school year. A customer loyalty programme would also be a good idea to develop and will ensure higher profit.

5.4. Threat of substitutes
5.4.1. Buyer propensity to substitute
As all companies in all industry never want too many substitutes for their produce, Carambola is no exception. There is a strong tradition in Montenegro to avail of meals bought outside school rather than take packed lunches from home.

5.4.2. Buyer switching costs
The implementation of healthy food campaigns is changing parents’ minds. There is a growing trend to bring a packed lunch. During the period from 2008 to 2009, 50% of children in Montenegrin primary schools brought a packed lunch from home.

5.4.3. Number of substitute products available in the market
Carambola’s substitute products are school meals provided by the canteens and private school caterings.

6. INDUSTRY EVOLUTION
The first ever school lunches in Montenegro appeared in the latter part of the 19th century. They were introduced due to the high levels of malnutrition amongst children in poor areas. After the end of the Second World War it became obligatory for local authorities to provide children with school lunches. Children coming from low income families were provided with free school lunch. Examples include sandwiches, soup and fruits.

The trend of providing free school lunches to hundreds of children throughout Montenegro continued with the help of foreign donations and church firstly in Podgorica, followed by Cetinje. There are initiatives for Budva to get the third national cuisine for poor children. The Medical Research Council in its 1999 survey (Gillard, 1999) noticed that children in 1950’s had healthier diets than their counterparts in the 1990’s, with more nutrients and lower levels of fat and sugar.

The public in Montenegro showed good support for the increase of funding for school meals, pushing the government to create the School
Food Trust. This topic became a big factor in 2011.

From all the above stated, it can be concluded that the school lunch catering industry is generally young in Montenegro and has plenty of space for new companies to enter into this huge market.

7. INTERNATIONAL PRODUCT LIFE CYCLE

In the international product life cycle, Carambola is already in phase one (introduction in the home market) and is moving to phase two (export to developed and developing countries), looking at places like Ireland, where it is already successfully operating. Therefore, Montenegro is ideal place. In that way it is similar to Ireland. The two countries are sharing similar customs and food habits. Carambola therefore would have low costs because already has all of its pamphlets and materials used in Ireland, and it could use the same marketing activities as used in Ireland with no extra cost.

In the product life cycle model, Carambola wants to increase maturity, because it wants to earn as many profits as possible. Any company should try to manage any decline and should be constantly innovating and developing. In the short term orientation another service maybe kicked in. They were the first to introduce the calories counter. In that way they were innovative and at the same time they educated children to know what calorie numbers mean. That is how Carambola will continue to maintain increasing profit.

8. ENVIRONMENTAL SHIFTS

With the growing size and importance of the Montenegrin service sector and with the Montenegrin economy increasing, debates about the suitability of the current environmental management system to deal with environmental shifts. According to EUROSTAT, there are approximately 20,000 employees in the food industry. For environmental shifts analysis a simple conceptual framework will be used (Davies, Konisky, 2000) that segregates the environmental impacts of these industries into direct, upstream, and downstream group. While the direct environmental impacts (e.g. energy use, water emissions; food safety concerns; refrigerants) are important to recognize and address, opportunities also exist for these industries to address their upstream and downstream environmental impacts. This fact has caught the attention of the environmental policy community (Allenby, 1997; Guile and Cohon, 1997; Rejeski, 1997; Graedel, 1998; Elger and Scheiner, 1997; Grove, et al., 1996).

Environmental shifts had a huge impact on these results. New standards have been adopted in Montenegro and now only healthy food is to be served as school lunch. Carambola has already incorporated HACCP and healthy food standards in its meals served throughout Ireland and can easily adapt and fulfill Montenegrin criteria.

9. POLITICAL, TRANSACTIONAL AND OPERATIONAL RISKS

Authorities of some host countries can make barriers to all foreign firms, or firms from one country in particular, as these companies may represent a threat to their sovereignty (Hymer, 1976; Stopford and Strange, 1992; Kobrin, 2001). To reduce such a threat, the government in the host country establishes limitations to the activities of foreign firms there (Buckley and Casson, 1976; Stopford and Strange, 1992; Kobrin, 2001; Spar, 2001), increasing the risk of operating in the host country (Kobrin, 1979; Fitzpatrick, 1983). Keeping in mind that Carambola wants to enter into the Montenegrin market, it will not have these threats. Montenegro as a candidate country to enter the European Union (EU), have to grant free access to all Irish and other EU companies want to enter the Montenegrin market. Montenegro as a country with neoliberal market and economy is promoting the European Common Market, nad CEFTA market which allows other companies from the EU to enter the market. Risk of political change and risk of invoking protectionist sentiments are therefore eliminated.

Due to the fact that Carambola is not currently part of any workers union, it should follow on that it would not become part of a workers union in Montenegro either. Workers unions
there, like in Ireland, are not powerful compared with other European countries, such as Germany and France, where companies need to be a part of one. Unions in these countries may make certain impediments to new companies entering these markets. Both countries, Ireland and Montenegro, have really strong control and implementation of hazard analysis and critical control points standards. HACCP forms the backbone of all food regulation on Earth. In the food business, HACCP comes first. Carambola fulfils all regulations on food health and safety legislation. They use the most relevant food safety methods. The country has imposed really strict criteria in food business industry in accordance with HACCP. This means that Carambola would have minor political and operational risks while choosing to internationalize. The only risk that can arise is transactional risk. The risk incumbent in actually transacting within the economic domain of Montenegro. As part of the Euro zone, Ireland is using the euro as an official currency just like Montenegro, so there will be no exchange rate costs. Montenegro’s official currency is the euro. Risk can appear in currency fluctuations, because of the current debt crisis in Euro zone. Taxes can influence on transactional risk. In the past few months, we have witnessed that certain countries because of the crisis need to increase their taxes to be make their budget sustainable. Tax consistency is one of the issues that needs to be observed carefully.

These are some of the risks identified and prioritized. Carambola needs to monitor and control these to make the best chance of realising these opportunities.

10. THE UPPSALA MODEL VERSUS BORN GLOBAL FIRMS

Two different themes can be identified when discussing about SME internationalization: the Uppsala model and the ‘born global’ model.

The Uppsala model identifies the internationalization process as a progressive expansion, where a firm starts by incrementing sales inside the domestic market, continues by exporting services or products into a foreign market and finally, it finishes by settling subsidies abroad (Johanson & Vahlne, 2009).

The ‘born global’ model refers to those firms which do not follow the traditional internationalization process as they are international from their inception. These types of companies grow up with a global perception and see the world as a unique marketplace (Frynas & Mellahi, 2011). They are also known by other terms, i.e. early internationalizing firms, international new ventures, although by far the most commonly used is born global firms (Andersson, 2011; Andersson & Wictor, 2003).

In this paper, we are just going to refer to the Uppsala model because Carambola is a traditional business which follows its structure.

According to the Uppsala model, a firm’s internationalization normally begins with an increment of sales and a subsequent development of more subsidies into the domestic market. Then, companies frequently continue with _ad hoc exporting_ and they formalize their presence through intermediaries who represent the focal companies in the foreign market (Carlson, 1975; Johanson & Vahlne, 2009). Normally, when sales gradually grow, they replace the intermediaries for their own sales organization and if growth continues, they go a step further and they start to manufacture in the foreign market. This part of the process is called _establishment chain_ (Johanson & Vahlne, 2009). This last dimension of the internationalization usually commences close to the domestic market as there is a factor called _physic distance_ (Johanson & Wiedersheim-Paul, 1975; Armario, Ruiz & Armario, 2008; Johanson & Vahlne, 2009) that ‘make it difficult to understand foreign environments’ (Johanson & Vahlne, 2009). Finally, if sales keep increasing, the firm will gradually overcome that physic distance to expand its market. This process is called _liability of foreignness_ (Johanson & Vahlne, 2009).

Carambola was founded in 2003, supplying 27 kids in an underprivileged area of North Limerick and today, they are supplying up to 75,000 lunches per week to children in over 100 schools across the Republic of Ireland.
Carambola currently finds itself at the end of stage one; they have been growing steadily throughout Ireland in the past nine years, gradually maturing the business and they now feel the time is right to move to stage two: *ad hoc exporting*. They want to internationalise because the firm has earned a large amount of experience to date and they want to expand their business concept as there is a risk of not getting any more funds from the Irish government.

Carambola wants to formalize the internationalization process by exporting the idea of healthy lunches. This can be done through a franchiser, who would represent the firm’s name and ideals, and if the concept of primary healthy lunches is successful, Carambola could replace the franchiser for an establishment chain in the long run.

This launch would be carried out in Montenegro because it is a smaller and challenging market where the culture and the eating habits are similar. At the moment, Montenegro seems to be the potential market because of the rising childhood obesity problems that the government is trying to reduce through healthy food.

11. MODELS OF ENTRY AND RISKS

The modes of entry into foreign markets can be grouped into five main categories: export, licensing, franchising, international joint venture and wholly-owned operations, going from less commitment and less risk to a higher commitment and higher risk.

11.1. Export

Exporting is the action of transferring goods or services from the domestic market into a foreign market. It requires a very low commitment, a low-risk strategy and in case of failure, the firm can withdraw its operation with minimum damage (Frynas & Mellahi, 2011).

11.2. Licensing

Licensing is the transfer of a firm’s know-how as well as all the information needed to sell a product or service with respect to a physical territory. Licensing does not mean replicating the goods in the same way as it exists in the domestic country. The product or service may be adapted and modified to conform with legal factors. There may be a risk of deception that the licensee appropriates the intellectual property of the firm.

11.3. Franchising

Franchising is the transfer of a whole business concept to a franchiser ‘who purchase the rights to exploit commercially the concept and trade names for a given period of time in a given geographical territory’ (Frynas & Mellahi, 2011). The franchiser has the obligation to promote the brand name and the business concept. The risk this may raise is that if the franchiser does not fulfil the responsibilities for improving the quality of the product, the franchise’s reputation may be damaged not only in the host country but also in the domestic market.

11.4. International joint venture

A joint venture is when two or more parties come together to carry out the same enterprise and project and consequently they share revenues, expenses and assets. The risks imply the necessity of a big financial investment and in the case that the ‘marriage’ doesn’t go well, to getting out of the agreement can be costly.

11.5. A wholly-owned venture

This entails building a new subsidiary and bringing the same strategy and structure into a foreign market. It requires a high-capital risk investing a lot of money in publicity to build relationships with new customers as well as recruiting new employees and managers in the new country.

Franchising is the mode of entry that is highly recommended for Carambola. Compared to large Multi-National Enterprises (MNEs), Small and Medium Enterprises (SMEs) tend to have far fewer resources. For this reason, a wholly-owned venture and a joint venture would not be feasible as they require a high-cost capital inversion. Thus, a small-sized enterprise that has sixteen employees would not possess greater managerial and financial resources to invest in these modes of entry. It would be a risky option for a company which is attempting the internationalization process for
the first time. SMEs with more experience in international markets will tend to prefer more equity modes of entry compared with less experienced SMEs (Nakos & Brouthers, 2002).

Exporting is not really costly and it is efficient when you go to a niche market. It is not advisable in this case because Carambola is not offering a new product. Already made lunches can be found in Montenegro and transporting them from Ireland would end up being more expensive than producing there.

Licensing may be risky for Carambola because the licensee does not have the obligation to promote the firm and the service may be modified, jeopardizing the whole business idea. For this reason, we believe that franchising would suit Carambola better because the whole business concept will be transferred as management would like. We also think that the two mascots, Cara and Bola, are the strong and innovative points of the firm to date, and that the idea should be reflected in Montenegro in the same way. Moreover, the franchiser would have responsibilities, such as promoting the business, incrementing the sales, and building new relationships with customers, which are advantageous options when a firm is attempting the internationalization jump for the first time.

12. CONCLUSION

We strongly recommend Carambola to enter into the Montenegrin market because of several reasons. Montenegro and Ireland share the similar values meaning that the company can apply the same way of advertising like the one used in Ireland without adaptation costs.

As the presence of fast food in both countries is really high, population is becoming obese, especially children, so a growing concern about healthy food standards is rising. Governments are giving lot of funds to companies involved in promoting healthy nutrition. That means there is a clear market need for a company like Carambola.

Bearing in mind that Carambola is a small company, we highly advise franchising as the most appropriate mode of entry. Franchise involves medium risk and medium commitment for both parts. Franchiser has the obligation and responsibility to promote the company and to get new customers.

Because of these shared factors, we have chosen Montenegro as a potential region for Carambola to start internationalising and franchising as the best mode of entry.

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**SINERGY OF DIGITAL UNIVERSITY AND DIGITAL ENTERPRISE: MANAGEMENT OF INNOVATIVE ACTIVITIES**

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**Abstract:** Integration of education and research in Europe with a rigorous innovative approach is the priority of a knowledge-oriented society that necessitates economic growth and employment creation. According to the Lisbon convention, the European qualification framework has to define standards for mutual recognition of qualifications throughout Europe. In such a society, the partnership of the *digital university* and the *digital enterprise* has to define the common business excellence as basis for the integration of the European Higher Education Area and the European Research Area, as dictated by principles of the *Bologna Declaration* and European dimension of quality. Both the university world and the business world are integrated in the presented model that includes the definitions of the effect of such integration in study programmes, Quality Assurance systems and professional training in the harsh conditions of international competition and comparisons. Our paper describes a co-operation model that integrates education and research activities between University and Industry taking into account analogues between established Quality Assurance systems.

**Key words:** European integrations, University-Industry relationship, Common business excellence, Management of innovations, Quality Assurance, Bologna process.

**1. INTRODUCTION**

European universities are in the extended period of the Bologna reform process whose purpose is to establish the common European Higher Education Area (EHEA) and European Research Area (ERA). Quality assurance (QA) activities and future pan-European accreditation have to be accomplished in order that universities be part of a knowledge-oriented society (*Bologna Declaration*, 1999). QA systems at institutional, national and European levels define reference and specific (partial and particular) QA models of internal and external QA procedures, taking into account boundaries and needs of education-research-business environments of the universities (labour market with national and European qualification frameworks and co-operations in research) (*Spasic*, 2007). *Digital university* is a higher education (HE) institution in which all activities are computerised in an integrated information-communication system whose subsystems and modules employ a uniform data/knowledge base with well-defined internal and external electronic exchange of digital information. *Digital enterprise*, or *digital factory*, is a manufacturing or business organisation with a high level of automation and advanced Information-Communication technologies (ICT) for the digital description of products and services in manufacturing-business operations. The synergy of *digital university* and *digital enterprise* in the knowledge-based society of the future understands the definition of the model of University and Industry (U&I) common business excellence.

Relationships between University and Industry or Economy are not a new phenomenon in the academic and business worlds. However, the integration of EHEA and ERA activities is currently in progress for Europe-2020 based on the Bologna principles (strong universities for a prosperous future). *Crespo and Dridi* (2007) illustrated how the intensification of U&I relationships were important for academic research activities and described the results from six Canadian HE institutions in Québec. To assess the intensification of relationships it
is possible to use several indicative parameters: growth of funds received from industry for research and development (R&D), growth in jointly authored articles by industrial researchers and university researchers, growth in the number of licences generated by university research, growth in the amount of licensing income received and growth in patent applications. Relationships may also have latent dysfunctional effects with regard to conflicts of interest, as some university researchers have created start-up companies, but problems have to be solved in ways that satisfy both the researcher and the institution. Leydesdorff and Etzkowitz (2001) found it by adding the notion of the exchange of roles between the state, universities and industry. The state and government as promoters of innovation policy also have other roles, such as their participation in research programmes and professional training of highly skilled workforce and the commercialisation of intellectual property. Experts from industry are interested in working with universities in order to make progress in fields in which they do not feel competent. University researchers are invited to participate in these programmes with the explicit objective of adding value to products and services from industry by innovating teaching course material. Universities and colleges have to define contracts and agreement with their industrial partners to allow students to complete their assignments required for graduation.

Deam and Lukas (2007) explored academic staff, departmental research and teaching traditions at five universities in Scotland and England, the regions with increasingly diverging public policies with respect to education. The themes of how academic traditions are shaped and research/teaching connections are viewed have both international as well as UK relevance. On the basis of experience in Spain, Martinez and Moreno (2007) indicated that the achieved competencies, the quantity and distribution of the time employed and the activities carried out by students were fundamental elements of the future EHEA. George (2006) noted that in case of Australian universities there had been an increasing emphasis on the importance of HE institutions for sustainable development, particularly because of their importance to the global knowledge economy. Bornmann et al. (2006) presented results from the first representative investigation of multi-stage procedures as the main QA instrument for the evaluation of education in Germany and indicated that participants in the evaluations (reviewers and those reviewed) were satisfied. Renaud and Murray (2007) found that the frequency of higher-order questions concerning tests and assignments could be a valid process and performance indicator as it was related to advances in students’ critical thinking skills. Velasco (2007) investigated the determinants of the transition from HE to work across Europe using various specifications of duration models on university graduates from nine European countries, with respect to differences between the North and South of Europe in the difficulty of securing a first job. The time to secure a first job, a transition step to first employment, was one of the indicators of output quality in HE institutions.

2. EUROPEAN INTEGRATION TRENDS

The European University Association (EUA) prepared for bi-annual meetings of Education Ministers Trend reports (1999, 2001, 2003, 2005, 2007 and 2010) to gather reliable information about how the EHEA and ERA were being developed across the continent to indicate the progress made by Europe's universities in implementing Bologna reforms and to outline the main challenges ahead. The EUA Trend IV report (2005) indicated that universities had demonstrated inextricable linkage between implementing the Bologna reforms and meeting the research and innovation goals of the Lisbon Agenda (2004) as "the most competitive and dynamic knowledge-driven economy". These two policy agendas urgently need to be viewed together in order for each to be successful in the long term. Recognising this common research and HE agenda implies rethinking the role of governments in their relation to universities.

The importance of investment into education, innovation and research in meeting the Lisbon goals, and the central role of universities, means
that policy discussions between universities and national authorities should take place with emphasis on appropriate training for the advancement of knowledge through original research. The EUA Trends V report (2007) provides the most comprehensive view available of the state of the EHEA as seen by more than 900 HE institutions themselves. The report demonstrates that there has been extraordinary change in European HE and that institutions are seriously engaging in the implementation of these reforms. There is an increasing awareness that concern for QA must be at the heart of the system. Trends V suggests that employability is also a high priority in the reform of curricula in all study cycles. This concern transcends national boundaries and implementation priorities, but results also reveal that there is still plenty to be done to translate this priority into institutional practice in that HE should be more responsive to the needs of a changing European society and common labour market with mobility of both students and academic staff. It indicates that one of the main challenges for the future is to strengthen the dialogue with employers and other external stakeholders (feedback information in the QA system). For many HE institutions this requires a change in traditions that will take time. "Although the momentum of reform has clearly been gaining pace as the Bologna process advances, the greatest challenge is to communicate far more broadly the nature of these structural and curricular reforms". The other three key challenges for the future development of the EHEA are strengthening the relationship between governments, HE institutions and other stakeholders, institutions’ need to develop the long-life learning agenda as well as beginning to think through the implications of the existence of the European Higher Education Area after 2010. A four-point agenda for the EHEA includes (EUA Trends 10 Report, 2010) lifelong access to learning of European citizens, a partnership to support quality, creativity and innovation, a European HE identity in the world, as well as the European Knowledge Area.

On the basis of two main documents of the European integration in the HE (Magna Carta Universitatum, 1988; Bologna Declaration, 1999), each subsequent conference of European ministers responsible for HE defined four documents in the form of communiqués (Prague, 2001; Berlin, 2003; Bergen, 2005; London, 2007; Louvain, 2007). Each of these documents was compiled on the basis of national reports providing evidence of progress made and was meant to set priorities and new objectives, as well as to speed up progress adopting Bologna principles.

The Prague Communiqué (2001) accepted that students were full members of the HE community. Other actions considered the following objectives: adoption of a system of easily readable and comparable degrees, adoption of a system essentially based on two main cycles, establishment of a system of credits, promotion of mobility, promotion of European cooperation in QA and promotion of European dimensions in HE. A significant impulse for new developments took place as a result of the Berlin Communiqué (2003) which requested that effective QA systems be promoted at institutional, national and European levels, that effective use of the system based on two study cycles be intensified and that the recognition system of degrees and periods of studies be improved. Ministers declared that “the primary responsibility for QA lies with each institution itself and this provides the basis for real accountability of the academic system within the national quality framework”. Accountability of the academic system within the national quality framework and national QA systems by 2005 should include responsibilities of the bodies and institutions involved, evaluation of study programmes and HE institutions, a system of accreditation, certification or comparable procedures, as well as international participation, co-operation and networking. These changes in turn provided the basis for the agreement on European standards and guidelines for internal and external QA procedures, which were the result of intensive work between QA agencies, HE institutions and student representatives. The Bergen Communiqué (2005) underlined the importance of HE in further enhancing research and the importance of research in underpinning HE for
the economic and cultural development of European societies and for social cohesion. The importance of research and research training for maintaining and improving the quality and enhancing the competitiveness and attractiveness of the EHEA was emphasised. With a view to achieving better results the need to improve the synergy between the HE sector and other research sectors throughout European countries and between the EHEA and the ERA was recognised. The London Communiqué (2007) underlined the importance of preparing students for life as active citizens in view of their future careers with personal development, creating and maintaining an advanced knowledge base and stimulating research and innovation. Curricular reforms have to lead to better suited qualifications both for the needs of the labour market and for further study. HE institutions have to implement the European Credit Transfer System (ECTS) as a function of learning outcomes and student workload with respect of qualification frameworks. HE should play an important role in fostering social cohesion to raise the level of knowledge, skills and competences of experts. HE institutions will need to communicate more with employers and other stakeholders in partnerships and cooperation with employers (Alumni associations) in the ongoing process of curriculum innovation based on learning outcomes.

Europe needs strong universities with more student-centred and problem-based learning and an increasingly competitive environment for a prosperous future. The best guarantee of success are the efforts of autonomous and properly funded HE institutions that have well developed internal and external QA processes to move forward as quickly as possible. The EHEA and ERA will continue to display a “work in progress” sign well beyond 2010.

3. MODEL OF COMMON U&I BUSINESS EXCELLENCE

University and Industry/Economy represent important mutual business environments, but via their mutual cooperation they also share joint business environments - world markets of products, services and knowledge. The products from universities are experts in all fields and are expected to contribute to the development of Industry/Economy. It is for this reason that particular importance is given to defining the model of common U&I business excellence (Figure 1). According to the joint business environment this is a three-dimensional model whose dimensions are:

| Business domain - Organisational level – Functional activity |

The entire state space of joint business operations of U&I has been filled with common building blocks. Three such building blocks for HE institutions and manufacturing industry (MI) are shown in the figure as:

Block A: \{Higher Education – Strategic level – Quality Assurance\},

Block B: \{Manufacturing industry – Tactic level – Quality Assurance\},
Block C: \{Manufacturing industry – Operation level – Management\}.

The building blocks are inter-connected by interface blocks and by information flows providing transfer of information and knowledge in the mutual informational and functional integrations of partners.

The presented model includes the complex problem of QA systems for all university activities (education, research, management and administration), taking into consideration the industry as its business environment. The system of integrated QA also refers to financial and administrative procedures in an integrated information-communication system with an integrated and uniform data/knowledge base and repository of information (e-archive), as well as distributed data/knowledge bases of faculties/departments in order to enhance efficiency of information resource allocation and utilisation.

QA systems with regard to “University – Industry” relationships imply establishment of business and information-communication connections of academic institutions (universities, faculties, colleges, departments, schools, institutes, centres and libraries) with their business environment. The relationships should be unilateral or bilateral and refer to education, research, development, professional training for students and experts, consultancy and definition of admission plans for students in communication with the relevant authorities. Student admission quotas for certain HE institutions should be set individually by each respective university (faculties, colleges or departments) considering their qualitative and quantitative capacities for the academic flow of students through study programmes and semesters, whereas the relevant authorities should be responsible for consideration of the actual needs of the industry/economy within the scope of national and European frameworks of qualifications.

4. QA SYSTEMS UNIVERSITY AND ENTERPRISE

4.1. QA SYSTEM FOR DIGITAL UNIVERSITY

The QA system, as a core part of an integrated information-communication system for digital university, should be an optimal integration of good practices in all its organisational units, taking into account partial and particular successful solutions of individual faculties, colleges, departments and schools (Spasic et al., 2003). In accordance with a system approach, the university QA system must be a multi-objective, discrete, dynamic and complex system with continual and gradual improvement of quality indicators and business performances. Optimisation of behaviour or transfer of given input quality to expected output quality, in spite of continuous changes in the education-business environment, is necessary. This is also a system with multiple decision-making processes with multi-criteria co-ordination and harmonisation among defined complex objectives of integrated subsystems and modules. In other words, we have wide functional and informational integrations extending across the university with cross-disciplinary expertise and informational connections with stakeholders (industry, economy, culture, health, students and others).

System analysis results were obtained from many European and all Serbian universities in order to define requirement specifications for all computerised activities as the basis for new design for implementation of an integrated QA system (Spasic at al., 2004). Taking into account all the prerequisites, fifteen QA subsystems or work stages distributed at strata levels of the model were defined as follows (Figure 2):

1. Benchmarking analysis of QA systems and models with self-evaluation;
2. Reference and specific (partial and particular) QA systems and models;
3. Quality indicators development and business performance definition;
4. Data/knowledge base with informational integration;
5. Evaluation of study programmes;
6. Evaluation of HE institution with organisation units;
7. Questionnaires with statistical processing;
8. Accreditation of study programmes and HE institution;  
9. Student activities;  
10. Quality procedures and standard specifications;  
11. Centres of excellence in QA;  
12. Communication infrastructure;  
13. Alumni associations;  
14. Academic environment;  
15. Updating, testing and new implementations.

Figure 2 - Model of continual improvement for QA system with feedback loop

For example, according to the Bologna principles, the main tasks of QA subsystem 9 are: Establishment of Student Parliament, Student organisations bodies, Recruitment and admission of students, Student services, Interchange programmes, Career service, Credits and workload to acquire the learning outcome, Working and academic performance in the student's progress through semesters, school years and study programmes, Student questionnaires, Working conditions for students with disabilities, Taking part in decision making bodies and other additional tasks.

Co-ordination of QA activities needs well defined responsibilities at different management levels (Rectors’ collegiums, Deans’ collegiums, Heads of chairs or departments (Figure 3) for integration of partial subsystem objectives (f1, f2, ... , fn) in cross – faculty/department integration to the integrated long-term objectives (F1, F2, ... , Fm) of good practice in cross – university integration, in order to assert commonality for comparable evaluations, quality indicators, output reports and business performances. For each of n subsystems or work stages of the model it is possible to define the input/output vector x_i (i = 1, ..., n) as well as the vector of controlled decision variables c_i (i = 1, ..., n) (Spasic, 2006; Haimes et al., 1990).

The backgrounds in QA system design and implementation are documents of internal and external evaluations and important documents from the relevant European associations EUA, European Network for Quality Assurance (ENQA), European Consortium for Accreditation (ECA), National Unions of students in Europe (ESIB), UNESCO, World Bank, OEBS and documents of other relevant institutions also have to be taken into account.
Current research plans and programmes require precise definitions of scientific-research priorities in all participating countries that have to be complementary with priority topics supported by the European priorities. Such programmes require universities' and institutes' resources in collaboration with industry. The European policy to obtain a knowledge-based society has adopted the action plan defined as the eEurope Resolution followed by the i2010 initiative (European Commission, 2005) promoting an open and competitive digital economy for an information-based society. A European strategy for further development is left with clear yet challenging choices in accordance with three scenarios for Europe by 2020, presented in Figure 4 (European Commission, 2010; European Council, 2010):

**Figure 3** - Dynamic model of integrated activities of QA system

**Figure 4** - Scenarios for Europe development (Source: European Commission)
Scenario 1: *Europe is able to make a full return to earlier growth path and raise its potential to go beyond.*

Scenario 2: *Europe will have suffered a permanent loss in wealth and start growing again from this eroded basis.*

Scenario 3: *Europe will have suffered a permanent loss in wealth and potential for future growth.*

The quality of research activities is generally evaluated on the basis of teaching modules and study programmes as a function of research, teaching materials as a function of available resources, project documentation and communication with stakeholders, dissemination of research results, employments on the basis of research results, satisfaction of stakeholders' expectations and on the basis of overall education-research (E&R) relationship. All quality procedures (examples being data and knowledge processing, statistical and other reports) and monitoring of quality indicator and business performance values must be comparable at both university and national levels. Feedback information from stakeholders (for example, interaction with industry or feedback information from Alumni associations connects different subsystems and modules of the QA system for digital university.

### 4.2. QA SYSTEM FOR DIGITAL ENTERPRISE

A QA system for a Computer Integrated Manufacturing enterprise (CIM-enterprise) with integrated manufacturing, information and communication technologies is an essential function to allow manufacturing and other operations (monitoring, acceptance, business performance measurements, corrective actions and others). According to Rembold et al. (1993) it is possible to define QA activities in the scope of the Control System (CS) with controller and feedback loops in the manufacturing system. Figure 5 shows this model starting from defined inputs (standard specifications, neutral digital descriptions of product data, numerical control part programmes, working orders and other documentation) until the delivered product to customers with appropriate monitoring of its behaviour in usage.

![Figure 5 - Control System for QA activities within manufacturing enterprise](image)

Measurement in QA activities is the process of comparison of planned and achieved quality of products and services. For manufacturing processes of CIM-enterprises it is possible to define two control loops - technical (measurement, comparing, setting manipulated variables of the controller) and organisational (machine scheduling and rescheduling depending on status values of the manufacturing system and work assignment). High quality is planned and designed for plant and connected workshops, as well as manufacturing and assembling operations to achieve planned quality of final products.

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Standard specifications for quality of products and services are set by customer requests and the competitive world market. Close business interaction with customers and suppliers is achieved by transferring the information (neutral and digital product data description) between CIM-subsystems of the product manufacturer and its business partners. The specifications of ISO 10303 standards define neutral digital description of product data for the purpose of information compatibility. The application of standard for exchange of product data (STEP) and relevant application protocols in use are mostly related to the activities of the designers of the product and technologies such as functional design, functional-geometrical design, manufacturing-geometrical design, process planning and others (Owen, 1993). In this way the demands of customers are brought into focus both during production in manufacturing workshops, and during maintenance and use. Manufacturers' maintenance recommendations are translated into corresponding maintenance interventions of the corresponding customer's CIM-module. Data relating to product behaviour in use by its buyer are returned to the manufacturer as feedback information, so that the manufacturer can make necessary corrections to the product structure or to the applied technologies. The exchange of information in neutral digital EXPRESS language format (Schenk & Wilson, 1994) would eliminate the problem of the use of different application software in the production control domain. In this way an extended product data model is defined for useful communication between digital CIM-enterprise and its customers and suppliers.

5. EXAMPLE FROM QA SUBSYSTEMS

University teaching staff has generally been evaluated by their research results rather than through competence in education and innovations in the teaching process. Validation of contributions in management functions of professors at the university or college levels is rare, in spite of the fact that these requires a lot of time and responsibilities. Monitoring students' progress during their studies with accumulation of credits arising from low pass rates of certain courses is of particular importance for topical problems at university. Monitoring quality should be carried out at three levels, i.e. the faculty/college/department, the university and the society levels.

Example 1:

It is possible to define input quality at the entry point of generations from secondary schools and output quality after graduation (Spasic et al., 2007). However, correlation between input and output quality of generations is not possible to define without the transfer function of education process and students progress during the two study degrees (bachelor + master). Figure 6 shows a partial input quality for students’ enrolment according to school type (ranking of schools A, B and C) and according to the regions (ranking of regions A, B, C and D). According to demands of the Bologna Declaration students will have flexibility to choose and to define how to complete their studies, with opportunities to change direction and to have mobility.

![Figure 6 - Partial input quality from secondary schools and regions](image-url)
Example 2:

Deans collegiums' analysis at the Faculty of Mechanical Engineering (University of Belgrade) indicated that incomes from projects were distributed according to the percentage of the total: 57% - co-operation with industry, 27% - technological development programme, 10% - energy efficiency programme and 6% - basic research (Spasic et al. 2003). Income arising from co-operation with industry consisted of directly contracted projects, expert reports, training for knowledge innovation, consultancy services and issuing of various certificates. The participation of some categories of researchers taking part (or not taking part) in the research activities is shown in the histogram in Figure 7: FP – (full professors), AP – associate professors, AS – assistant professors and CS - university contract staff for research and education. Due to an incomplete database of research activities a review regarding co-operation with industry is was not possible. The percentages refer to the total number of teachers and assistants according to their professional titles.

![Figure 7 - Contribution of teaching staff in research](image)

With regard to the evaluation procedure of research activities, it is necessary to improve project documentation, research organisation, contracting of co-operation work, composition of project teams, quality of contract research staff, written research reports as well as the dissemination of research results. It is also important to enhance the quality of the decision-making process, overall resource allocation management, service management, information and communication system, data/knowledge bases and the procedure for monitoring and improving the established QA system.

Example 3:
Financial business operations within a HE institution during a period of time are shown in Figure 8 (Spasic, 2007). Two indicators of total business operations are shown – annual income and index of increase in comparison to previous business years (0.99, 1.01, 1.64, 1.89, 1.47, 1.23, 1.15, 1.22 and 1.23) for the three different business periods (unsuccessful business, success in changes and successful business).

Example 4:

The model of \( \{ \text{teaching} + \text{research} = \text{learning} \} \) based ICT integration of university activities is shown in Figure 9. Educational activities have to be based on world-wide collaborative networks and co-operation in distance education, open and long-life learning throughout the world. Research activities generate new teaching disciplines that have to be learned in current courses or in project-oriented educational methods. Students test their theoretical knowledge through Virtual Manufacturing Systems (VMS) of different industries with the aid of real and updated current data/knowledge bases that intensify their learning. This integration is primarily based on new information and educational technologies and current communication possibilities of the networked world that consists of the University world and Business world, including Alumni associations. Further challenges and priorities in the EHEA and ERA intentions of the European integration processes are to integrate these important academic activities in order to achieve the future knowledge-oriented society. Joint activities of U&I in the observed model are project-oriented education and student or workforce professional trainings.
Example 5:
Another example concerns the interaction between U&I in curricular development. Digital university has to test conceptual theoretical models with real information obtained from workshops of leading industries. Experts in industry must obtain some quality and flexible training experience with the real data for a new working content in advanced technologies or changed methods of work imposed by new ICT and company's integrated computerised activities of extended digital enterprise. The representative of the industry in this example produces cylinder assemblies (pistons, piston pins and cylinder liners) for freight vehicles, tractors, buses and passenger vehicles as well as other sand-mould castings and forging products. Curricula for three master courses are interconnected through the disciplines in the CIM course as well as with complementary designed learning outcomes. Two further courses of interest to the company are Manufacturing Automation and Engine Theory and Design. The relevant disciplines are:

CIM: (Enterprise modelling, Data/Knowledge base, Informational integration, CIM reference models, CAD/CAM/CAPP/PC/CIM subsystems (Computer Aided Design / Manufacturing / Process Planning / Production Control).

Manufacturing Automation: (Flexible automation, Control systems in manufacturing, Programming tools for automation).

Engine Theory and Design: (Engine piston and cylinder design, Piston thermal loads, Computer simulation of piston stresses, Tribology in piston engines).

Innovative work in industry has been achieved via the integration of HE and manufacturing activities. Students engaging in project work have the necessary initiative to deepen their knowledge, improve their skills and extend their competences.

Example 6:
In order to achieve common business excellence, U&I should have joint EHEA + ERA space to develop special and unique values of corporate culture and quality culture under the strict conditions of international competition and international comparison. The common state space for improvement of total business operations in the joint innovative work of U&I is shown in Figure 10. University business operations have been monitored in the co-ordinated system {education – research – total income} and the movement from the initial state to the current year is shown by the chart of overall business operations, together with the index of income increase. Industrial
and economic business operations have been monitored in the co-ordinated system defined by \{new products – new technologies – business plan\}. For the synergy of digital universities and digital enterprise, this movement through defined joint state space means a successful path towards EHEA and ERA integrations.

![Figure 10 - Common E&R business trajectory in state space](image)

6. CONCLUSION

Objective changes in the HE reform will be achieved through a continuous feedback loop within the university’s education-research-business environment. Digital university, once adjusted to standards for European integration, is the basis for the development of a knowledge-oriented society with experts for new working challenges. Interaction between HE institutions and industry/economy is an important segment in the actual reform and for the design of QA systems as the integration factor of education and research activities. QA systems should include responsibilities of bodies and institutions, internal and external evaluations of study programmes and HE institutions, certification of comparable quality procedures and standard specifications, national and pan-European procedures of accreditation as well as international promotion of the Bologna principles. It is necessary to establish monitoring mechanisms for a gradual improvement of HE systems at national levels, to harmonise partial reform strategies of HE institutions to the national strategies, to increase effectiveness and efficiency of education systems, to establish the relevance of study programmes with respect to the national economy needs, to allow the students to select their own route of study and professional training, to integrate study programmes and courses with research and training activities, to implement QA systems for gradual and continuous improvements as well as to achieve readiness of academic institutions for a knowledge-oriented society. Continuous, distance and long-life learning should be a communication link among economy-oriented faculties, colleges and departments in order to provide development of experts for new working sectors of the European qualification framework.

Manufacturers as digital enterprises can increase their market advantage by digital description of product data that will enable the user to maintain installed products within computerised activities and monitor their behaviour during customer’s use. The design of products for maintainability, with easy-to-use manuals that clearly explain operating, diagnostics, repair and troubleshooting procedures promote competitiveness within the increasingly harsh worldwide market. The compatibility of CIM-subsystems and CIM-modules, as well as the exchange of information between manufacturer and customer CIM-systems is feasible through neutral digital description of products and services by STEP file formats. This would provide feedback information for engineering
product design activities, as well as for the design of manufacturing operations.

Integrated QA systems have important integration roles in U&I relationships that imply forming education, research, business and information-communication connections between HE institutions and their academic environment (industry or economy). However, within their mutual cooperation they also have a joint business environment - world market of products, services and knowledge. This integration is primarily based on new advanced ICT and current communication possibilities of the networked world that in the presented model consists of both the university world and the business world with defined interactions. This is why predominant importance is given to defining a model of common business excellence. Therefore, collaboration of digital university and digital enterprise in the common EHEA and ERA space is necessary.

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Finacial Forecasting for Company Valuation Purposes

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Abstract: Company valuation is a very sensitive category, considering the fact that the basis on which it lies depends on many factors, and that it is often hard to understand what is really going on in the company, based solely on its financial statements. Maybe one of the hardest and the most sensitive tasks in the company valuation process is the creation of different forecasts about trends of various financial data, necessary for the application of different company valuation methods. This paper tackles forecasting methods for predicting different financial categories, with the aim of creating foundations for valuing the company using some of available valuation methods.

Key words: Financial Forecasting, Company Valuation, Method, Rate of Return

1. INTRODUCTION

For anyone who finds themselves in the field of finance, it is priceless to know the company valuation methods. The reasons are numerous, from the necessity for valuation during mergers or acquisitions, to the simple, but essential importance of knowledge about the sources of value in the organization.

In order to implement different methods of company evaluation, it is necessary to gather a large amount of information and many questions need to be answered. Thus Palepu, Healy and Bernard describe the company valuation as a process of translating the various forecasts and predictions into the valuation of the company or a part of the company (Palepu, Healy, & Bernard, 2003).

The task of forecasting for the purpose of company valuation can be divided into two parts: forecasting during the finite number of years, or period or detailed forecasts and forecasting the terminal value, which represents the aggregate performance forecast after the period of detailed forecasts.

Another important problem arising regarding the application of company valuation, particularly in the application of the discounting cash flow method, as one of the most frequently used, is determining the appropriate discount rate that would be used in the calculation. In other words, in order to achieve that the valuation result to be as reliable as possible, it is necessary to evaluate what the real cost of capital is.

2. FORECASTING BUSINESS PERFORMANCE

Financial planning is a prediction, or projected guidance, coordinating and arranging of elements of the company’s financial functions, with the task of planning financial flows and financial structures and constructions.

The first step in predicting future performance necessary for the company evaluation, is to determine the forecasting time horizon. Considering the fact that this is usually a fairly long period, attention should be focused on the key elements of the performance necessary for the valuation, instead on the forecasting of complete financial statements.

The basis for a good forecast is the veracity of the key assumptions on which it rests. It is therefore very important that these assumptions be based on real facts about operations of a particular company. For this purpose it is necessary to perform both strategic and financial ratio analyses prior to forecasting process (Palepu, Healy, & Bernard, 2003). The strategic analysis is necessary in order to understand the company itself and its validity and sustainability performance position, while
the financial analysis is necessary in order to assess the current performance of the company. All these indicate that it is of utmost importance to see all of these elements connected as one continuous process of business analysis in which strategic and financial analyses are a prerequisite for forecasting future operating performance, which is, in turn, a prerequisite for a proper valuation of the company.

Business performance forecasting with the aim of company valuation should begin with assumptions about the key drivers of the company’s performance in every period of time, which will be sufficient for forecasting the company’s balance sheet, income statement, cash flow statement and return on equity. Palepu, Healy, Bernard suggested the following six key assumptions (Palepu, Healy, & Bernard, 2003):

1. Sales growth rate
2. Net operating profit after tax to sales ratio
3. Net interest after tax to net debt ratio
4. Net operating current assets to sales ratio
5. Net operating fixed assets to sales ratio
6. Net debt to net capital ratio

All items that represent the position of the balance sheet belong to the balance sheet at the beginning of the period, and all items of the income statement represent the positions belonging to the income statement for the period.

3. THE FORECAST OF THE FUTURE ECONOMIC BENEFITS

In order to evaluate companies using methods from profit based approach, it is necessary to make a projection of the company’s future cash flows.

There are five most commonly used methods for forecasting future economic benefits or future cash flows, by using historical data from the previous financial statements (usually for the most recent five years) (Hitchner, 2003):

- Weighted average method,
- Statistical trend line method,
- Formal projection method.

The first four methods are commonly used in the capitalization of cash flow method, or as a starting point in the discounted cash flow method. The fifth method is the basis for the implementation of the discounted cash flow method.

3.1. CURRENT EARNINGS METHOD

The profit for the year is sometimes the best estimate for the next year and the years to come. The management of a company here need to play an important role in assessing whether the earnings and cash flows will remain at the level they are at in the current year. If the assessment is that they will remain at a similar level, current benefits can be used as a basis for valuation. It is possible to estimate that the future value will be different from the current one, but that they will grow at a constant growth rate. However, any projection made in this way must be supported by clear underlying assumptions.

3.2. SIMPLE AVERAGE METHOD

According to the simple average method, the arithmetic mean of the values for the analysed past few years is simply taken as a projection for the next year. The method is quite simple and can be good if the calculation takes into account a large number of years. However, it fails to realistically depict the changes and trends in the growth of the company.

3.3. THE WEIGHTED AVERAGE METHOD

The weighted average method can be much more suited to depict the trends in the company’s operations than the previous two methods. This method provides greater flexibility, because it allows that values from particular years have little or no impact on the projected value, by assigning very low weights to these years or even weights that have a zero value. For the success of this method it is very important that the weights should be properly
determined, and for doing this it is necessary to observe the trend in the appropriate manner.

3.4. STATISTICAL TREND LINE METHOD

The static trend line method is a statistical use of the least squares formula. It is believed to be the most applicable to companies with fairly consistent operations and with expected consistent future operations. For proper implementation is necessary to use the data for at least five years of operation. It applies a linear function:

\[ Y = a + B x, \]

Where \( Y \) represents a predicted value of the variable \( y \) for the selected variable \( x \), the dependent variable; \( a \) represents an estimated value of \( y \), when \( x \) equals zero; \( b \) represents the slope, i.e., the average change in variable \( y \) for each change in variable \( x \); \( x \) is an independent variable, while parameters \( a \) and \( b \) can be calculated as:

\[ a = \frac{\sum Y - b \sum X}{N}, \quad \text{or} \quad a = \bar{Y} - b \bar{X}, \]

and \( b = \frac{N \sum XY - \sum X \sum Y}{N \sum X^2 - (\sum X)^2} \), where \( X \) represents the value of the independent variable, and \( Y \) is the value of the dependent variable, \( N \) is the size of the sample, \( \bar{X} \) is a mathematical mean of the independent variable and \( \bar{Y} \) is the mathematical mean of the dependent variable.

This method gives a big weight to the most recent periods, and therefore can provide a more accurate picture of the future cash flows, especially when further growth is expected.

3.5. FORMAL PROJECTION METHOD (DETAILED PROJECTION OF CASH FLOWS)

The formal projection method is commonly used in company valuating using the discounted cash flow method. The essence is in the selection of the period for which projections of cash flow would be made, after which it will be assumed that they will change at a constant rate. The period that follows the forecasting period is referred to as a terminal period. Usually it is considered to be sufficient to predict cash flows for the next three to five years, after which the business will stabilize, except in the case of a new business or a developing company.

Projections are made on the basis of normalized historical financial statements and trend analysis, with very important role analytical skills of a person who makes the projection.

4. FORECASTING TERMINAL VALUES

The terminal value is the present value of free cash flows after the terminal year and includes the forecast of company’s performance throughout the rest of its life. In other words, the terminal value is the value of the company after the period of detailed forecast. Therefore, it is necessary to adopt some assumptions, so that this part of the process of forecasting could be simplified. Some of the most common assumptions are (Palepu, Healy, & Bernard, 2003):

- The assumption of competitive equilibrium

Any prediction regarding the sales growth rate after the terminal year can be very contentious and, above all, wrong. It is difficult to determine how this rate will behave after six, seven or more years, since too many factors influence it, and many of them are under very little or no control of the individual or the company itself. Fortunately, it turns out that the value of this long term sales growth actually is of no importance. Furthermore, under plausible economic assumptions, there is no practical need for predicting growth rates of sales after the terminal year, because it is irrelevant when it comes to the current value of the company. This is because of a simple economic law that a new company will be moving into in the industry with a high yield on investments, which will lead to a decrease in the returns. In other words, new investments will have a rate of return equal to the cost of capital, and will represent projects with zero net present value. And when new projects have a zero net present value, they do not increase the value of the company. Of course, there are exceptions from this law, for example, companies with an outstanding brand can achieve an enormous rate of return over a number of years, or even indefinitely. However, in a general case, it can be assumed that, in the long run, the economic forces are pulling the rate of return in order to equalize it with the cost of capital.
• The assumption of competitive equilibrium in terms of incremental sales
This is a version of the previous assumption, which means that the company can be expected
to forever continue to realize abnormal earnings on the sales level it had in the terminal year, but
that it will not have abnormal earnings on any incremental sales after that level.

• Sustainable abnormal performance and growth
Previous assumptions about competitive balance can lead to misjudgements if the analyst estimates that the company is indeed able to generate abnormal profits on new projects in the long run. In this case it is better to plan the growth of abnormal earnings or cash flows at a constant rate. This approach may be more realistic than the previous one. Under this approach, if one assumes that the abnormal performance remains at the same level as in the terminal year, abnormal earnings and projected cash flows grow at the rate of the sales growth. Therefore, for a given discount rate \( r \), each flow that grows at a constant rate \( g \) can be discounted by dividing the flows from the first year with the amount \( (r - g) \), therefore, for the value of equity stands (Palepu, Healy, & Bernard, 2003):

\[
EV = \frac{DIV}{r-g},
\]

where \( EV \) represents equity value, \( DIV \) represents the value of dividend payout, \( r \) represents the relevant discount rate, and \( g \) represents the growth rate.

• Terminal values based on price multiples
A popular approach to terminal value is the application of multiples to the abnormal earnings, cash flows or book values of the terminal period.

4.1. METHODS FOR DETERMINING TERMINAL VALUES
There are several methods for determining a terminal value. The best known are (Hitchner, 2003):

- Gordon's growth model,
- Multiples output model,
- Value drivers model.

4.1.1. GORDON'S GROWTH MODEL
Given the fact that after some period of time, it is very difficult to make predictions about the future expected cash flows, it is assumed that the cash flows after that period are stabilized and therefore can be capitalized into infinity. This growth rate represents the average growth rate in the period after the period of forecast, which means that it is not expected to be at that level every year, but that it will be slightly higher or lower than it.

According to this model, the terminal value is calculated using the following formula (Hitchner, 2003):

\[
TV_n = \frac{NCF_n \times (1+g)}{r-g},
\]

where \( TV_n \) represents the terminal value of the company in the \( n^{th} \) year, \( NCF_n \) represents the net cash flow that the company generates the \( n^{th} \) year, \( g \) is the long-term growth rate, \( r \) is the appropriate discount rate, and \( n \) is a number of periods for which the projection is made.

The Gordon's model is the most commonly used one because of its simplicity and good theoretical inveteracy.

4.1.2. MULTIPLES OUTPUT MODEL
An alternative method of determining the terminal value is the use of multiples to some of the income parameters, such as net income, earnings before interest and taxes, earnings before interest, taxes, depreciation, and amortization etc., at the end of the forecast period. These multipliers are called output multipliers.

4.1.3. H MODEL
The model assumes that the growth during the terminal period begins at a higher rate, and then decreases linearly over a certain period of transition, to arrive at a stable level at which it remains to the infinity. The H model calculates terminal value in two phases:
Quantifying the value of the exceptional growth of the company during the period of the forecast,
The application of the traditional Gordon’s growth model during further stable growth.

Mathematically this can be expressed in the following way (Hitchner, 2003):

\[
\frac{\text{CF}_0 \times (1+g_s)}{r-g_s} + \frac{\text{CF}_0 \times h \times (g_i+g_s)}{r-g_s},
\]

where \( \text{CF}_0 \) represents the initial cash flow, \( r \) represents the discount rate, \( h \) represents the midpoint of the high growth (transition period divided by two), \( g_i \) is the growth rate in the initial period of high growth, and \( g_s \) is the rate of growth during the stable period.

### 4.1.4. VALUE DRIVERS MODEL

In the Gordon’s model, free cash flow is discounted using a weighted average cost of capital decreased by the growth rate, in order to determine the value of the continuous cash flow. On the other hand, in the value drivers model, the company’s net profit is discounted and capitalized and adjusted directly using the cost of capital. The analyst does not have the data about the level of incremental investments, and the assumptions about the infinite growth are also eliminated.

For a large number of companies in a competitive environment, it can be expected that the return on a net new investments ultimately converge to the cost of capital. In other words, the return on incremental invested capital is equal to the cost of capital (Copeland, Koller, & Murrina, 2000). Therefore, the resulting valuation model, known as value drivers model, assumes that the return on capital and cost of capital are equal regardless of the growth rate and are defined as follows (Hitchner, 2003):

\[
CV = \frac{\text{NOPLAT}_{T+1}(1 - \frac{g}{\text{ROIC}})}{\text{WACC} - g},
\]

where \( CV \) represents a continuous value, \( \text{NOPLAT}_{T+1} \) represents the normalized net operating profit less adjusted taxes in the first year after the explicit period of forecast, \( g \) is the expected growth rate of the net operating profit less adjusted taxes in infinity, \( \text{ROIC} \) is the expected rate of return on net new investment, and \( \text{WACC} \) stands for the weighted average cost of capital.

Combining the Gordon’s model with the value drivers model can help the analyst to determine whether the return on net new investment equals the weighted average cost of the capital, the above formula becomes

\[
\text{NOPLAT}_{T+1} = \frac{\text{WACC} - g}{\text{WACC} - g}.
\]

4.2. SELECTING THE TERMINAL YEAR

If the presumption of a competitive equilibrium is applied, one should choose the terminal year in the case when returns on the incremental investment projects achieve that balance. Experience shows that five to ten years is more than enough for most companies. The
exceptions are some companies with great power or a strong brand that are able to expand their investments in emerging markets with exceptional yields for many years (Palepu, Healy, & Bernard, 2003).

5. DETERMINING THE APPROPRIATE DISCOUNT RATE

There are several methods for determining the cost of capital or a discount rate. The best known and the most commonly used are (Hitchner, 2003):

- Building-up method,
- Weighted average cost of capital,
- Capital asset pricing model,
- Modified capital asset pricing model,
- Price/earnings method.

5.1. BUILDING-UP MODEL

According to the building-up method, the discount rate is calculated by adding the estimates given by the analyst regarding a systematic risk and an unsystematic risk for a company. This method is the most commonly used for small and medium-sized companies (Hitchner, 2003).

According to the traditional building-up method, the discount rate is calculated as follows (Hitchner, 2003):

\[
E(R_i) = R_f + RP_m + RP_s + RP_u,
\]

where \(E(R_i)\) represents the expected rate of return, \(R_f\) represents the rate of return on the risk-free securities, \(RP_m\) represents a risk premium for the market for investing in the shares, \(RP_s\) represents a risk premium derived from the size of the company, and \(RP_u\) represents a risk premium specific to the company, the non-systemic risk.

5.2. WEIGHTED AVERAGE COST OF CAPITAL

When valuing companies, analysts value assets that belong to shareholders, as well to various creditors. Therefore, the appropriate cost of capital is the weighted average cost of capital, which means that it is necessary to weight the costs of debt and equity according to their market values.

The weighted average cost of capital, therefore, can be calculated through three steps (Hitchner, 2003):

First – Determination of the share of each source of capital in the financing structure, based on their market value.

Second – Calculation of the rate of return after tax for each source of funding.

Third – Calculation of the weighted average cost for all sources of funding.

Mathematically it can be expressed as:

\[
WACC = \frac{V_d}{V_d+V_s} r_d (1 - T) + \frac{V_d}{V_d+V_s} r_s,
\]

where \(WACC\) represents a weighted average cost of capital, \(V_d\) represents the market value of debt, \(V_s\) is the market value of equity, \(r_d\) is the cost of debt, \(r_s\) is the cost of equity, and \(T\) is a tax rate that reflects the tax advantage from using debt.

In order to determine the weighted average cost of capital, it is necessary to determine the prices of individual types of capital.

The cost of debt should be based on the current market interest rate. The cost of debt is fairly easy to determine, especially if interest rates were not significantly changed from the time when the debt was created. In this case it is enough to take the book value of the interest rate. If the level of interest rate has changed significantly, the value of the debt is determined by discounting the remaining payments at the current interest rate prevailing in the market. The cost of debt should be expressed with a tax reduction and usually can be obtained by multiplying the current market interest rate by (1-tax) rate.

The bigger problem, which arises in determining the cost of debt, deals with the question of what debt to take into account, more precisely, should solely long term or short term debt be considered, whether to calculate payables and accruals, etc. The answer to this question lies in the way the free cash flows are defined, because they represent the yields and returns to holders of capital for which the
weighted average cost of capital is calculated. Cash flows are those that are available before servicing long-term and short-term loans, which means that debt too should be included in the weighted average cost of capital. On the other hand, servicing other obligations, such as payables and accruals, is already taken into account in determining cash flows, and accordingly, they should not form part of the capital in the determination of the weighted average cost of capital (Palepu, Healy, & Bernard, 2003).

It is much more difficult to determine the market value of equity. A common approach to this problem is to determine the target ratio of debt to total capital and equity capital to total capital. In other words, one should determine the target proportion of certain parts of the capital in the total capital. Another way to solve this problem is to use the book value of equity as a starting point, as weights for determining the initial estimate the weighted average cost of capital, which in turn, can be used in the discount process for generating initial evaluation of the weighted average cost of capital. This initial value can then be used instead of speculations, in order to obtain a new weighted average cost of capital, and after it, the second estimation of the value of equity. The process can be repeated until the value used to calculate the weighted average cost of capital and the final estimated values converge towards each other (Palepu, Healy, & Bernard, 2003).

The required rate of return on equity can be estimated using the Gordon’s and Sapir’s valuation models with constant growth. According to this model, the required rate of return is calculated by the following formula (Fernández, 2007):

\[ K_e = \left( \frac{Div_1}{P_0} \right) + g, \]

where \( K_e \) represents the required rate of return on equity, \( Div_1 \) represents the expected dividends for the next period, \( Div_1 = Div_0(1 + g) \), \( P_0 \) is a current share price, and \( g \) represents a constant, sustainable dividend growth rate.

5.3. CAPITAL ASSET PRICING MODEL

Another way to determine the price of the equity is to apply the Capital Asset Pricing Model - CAPM model. The model is derived from the theory of capital markets and is used to measure the market linkages based on the theory of expected returns, if the investor is acting in accordance with a portfolio theory (Hitchner, 2003).

Since, according to the theory of capital markets, the overall risk can be divided into systematic and unsystematic risks, of which, according to the portfolio theory, unsystematic risk can be completely eliminated through diversification, the capital assets pricing model is based on quantifying the systemic risk only.

According to this model, the cost of equity is the sum of the required return on risk-free assets and the premium for systemic risk (Hitchner, 2003):

\[ r_e = r_f + \beta \left[ E(r_m) - r_f \right], \]

where \( r_e \) represents the return on equity, \( r_f \) represents the risk-free rate, usually a medium-term interest rate on government bonds, \( E(r_m) - r_f \) is the risk premium that is expected for the market as a whole, expressed as the excess of the expected return on the market index over the risk-free rate, and \( \beta \) is the systemic risk for equity, which reflects the sensitivity of the value of the company to the general economic movements on the market.

Although the capital assets pricing model is widely applied for the purpose of valuation of capital, experience shows that it is sufficiently complete (Palepu, Healy, & Bernard, 2003). If it is assumed that the share price is determined by the market, it can be expected to offer investors returns, offset their cost of capital, which means that the long-term average returns should be close to the cost of capital and accordingly the capital assets pricing model may vary depending on their systematic risk. However, there are other factors that affect the long-term variation in average returns, and the one of the most important is the size of the companies, because smaller companies tend to generate higher returns in the future. The reason for this is not quite clear; it is perhaps due to the
fact that small companies are riskier than the
capital assets pricing model suggests, or
because they are underestimated when
measured by their market capitalization, or due
to a combination of these two. However, if the
company's size is used as an indicator for
determining the cost of capital, it is implicitly
assumed that larger companies carry lower risk,
and financial theory has not yet developed the
adequate explanation for the reasons of this.

5.4. MODIFIED CAPITAL ASSET
PRICING MODEL, MCAPM

Modified capital asset pricing model attempts
to capture unsystematic risk too, by introducing
the effects of company size. In other words, this
model combines the capital asset pricing model
with the effects of company size.

This requires a modification of the formula for
determining the cost of capital according to the
capital asset pricing model, based on the
difference between the average return on the
market index used in the capital asset pricing
model and the average return of companies
whose size is comparable with a particular
company (Palepu, Healy, & Bernard, 2003):

\[
re = rf + \beta [E(r_m) - rf] + r_{size},
\]

where \( r_e \) represents the return on equity, \( rf \)
represents the risk-free rate, usually a medium-
term interest rate on government bonds, \( r_{size} \)
represents the return rate for comparable
companies, \( [E(r_m) - rf] \) is a risk premium that
is expected for the market as a whole, expressed
as the excess of the expected return on the
market index over the risk-free rate, and \( \beta \)
is the systemic risk for equity, which reflects the
sensitivity of the value of the company to the
general economic movements on the market.

5.5. PRICE/EARNINGS METHOD

There is a direct relationship between the rate
of earnings capitalization and price/earnings
multiple, and it is equal to the difference
between the discount rate (risk) and a long-term
sustainable growth. This assertion can be
proved mathematically (Hitchner, 2003):

\[
\frac{Price}{Earnings} = \frac{Price}{Net\ earning\ per\ share} = \frac{Total\ value\ of\ equity}{Total\ net\ earnings}.
\]

It is also well known that:

\[
Total\ value\ of\ equity = \frac{Total\ net\ earnings}{Earnings\ capitalization\ rate}.
\]

When this is replaced into the previous
equation, it becomes:

\[
\frac{Price}{Earnings} = \frac{Total\ net\ earnings}{Earnings\ capitalization\ rate},
\]

and this gives:

\[
\frac{Price}{Earnings} = \frac{1}{Earnings\ capitalization\ rate}.
\]

On the other hand, is it known that:

Earnings capitalization rate = Discount rate –
Long-term sustainable growth rate,

therefore:

\[
\frac{Price}{Earnings} = \frac{Discount\ rate - Longterm\ sustainable\ growth\ rate}{1}.
\]

Based on this equation, it is easy to determine
the required discount rate.

6. CONCLUSION

Valuation of the company is a complex process
that cannot be seen in isolation and alienation
from other processes that precede or follow it.
In order to even start with the evaluation, it is
necessary to collect a large amount of
information concerning internal operations, but
also the external environment. The financial
analysis, conducted on the basis of collected
information, represents the initial step for a
further forecast of financial performance, which
represents an essential input for the
implementation of a large number of available
methods of company valuation. The accuracy
of the forecasts obtained will be crucial for the
adequacy and accuracy of the valuation process,
therefore it is necessary to make as precise,
objective and professional financial forecasts as
possible through proper application of the
available methods of forecasting. However,
financial forecasting is not an isolated activity
that can be independent from the business
strategy analysis, accounting and financial analyses. Moreover, the success of predictions depends on the success of previous analyses of business. In order to forecast the financial performance as accurately as possible, the projections should be very detailed and should include forecasted balance sheet and cash flows of the company, in order to ensure internal consistency of the data. Also, it is important to avoid the unrealistic assumption that can take the further process of forecasts in a wrong direction. The data range, the level of detail, the way of obtaining them and the form of presenting the results of financial projections will depend on the valuing purpose, valuation methods, availability of data, adequacy of previously performed analysis of business strategy, accounting and financial analysis. This all proves the importance of a closed circle in which the company’s financial analysis, forecasting and valuation alternate and overlap.

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PROJECT OF IMS ESTABLISHING IN ORGANIZATION SOME ASPECTS AND PRACTICAL EXPERIENCES

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Abstract: Every management system established within an organization represents a system of its own, but all of them are oriented towards putting in order the relevant business processes and it is often difficult to make a difference among particular systems. It practically means that organizations are oriented to the development of Integrated Management System (IMS) that connects separate systems into a functional entity. Although these individual systems have certain common elements, there are some different ones and establishing IMS is not so easy as it could be concluded. In this paper, some practical aspects and experiences of approach and implementation of a project of IMS establishing in a particular organization are presented.

Key words: Integrated Management System, Project Management

1. INTRODUCTION

An Integrated Management System (IMS) is a management system within an organization which integrates all particular management practices into one coherent system. Although particular management systems have been developed as relatively independent from each other, and have been defined by particular international standards (BSI, 2007; ISO, 2004; ISO, 2005a; ISO, 2005b; ISO, 2008; ISO, 2009; ISO, 2011a), it is evident that there are certain common elements which can be managed in an integrated way as well as certain specific elements for particular management systems that call for a specific approach and activities. Officially, there is no standard for IMS, except guidelines to establish it (BSI, 2006), Figure 1, but it is evident that establishing IMS is a world trend. The reason is clear and logical - although there are differences among component management systems within IMS, they are established and applied within the organization which is indivisible and these differences enable to express all specifics of a particular organization as much as possible.

![Figure 1 - Principle of management systems’ integration (BSI, 2006)](image-url)
Figure 1 shows that various management systems requirements can be so arranged that the core requirements are addressed in a common way. This makes it possible to integrate the systems to the degree that is most appropriate to the organization whilst minimizing duplication.

2. STRUCTURE AND IMS ESTABLISHING APPROACHES

As a rule, the Integrated Management System includes the following management systems:

- Occupational Health and Safety Management System - OHSAS (BSI, 2007)
- Information Security Management System - ISMS (ISO, 2005a)
- Food Safety Management System - FSMS (ISO, 2005b)
- Risk Management - RM (ISO, 2009)
- Energy Management Systems - EnMS (ISO, 2011a) etc.

Of course, the character and the total number of management systems within an IMS depends on business activities of a particular organization, as well as on its determination to which segments of IMS it will give priority. However, it is necessary to make a difference between a „combined“ and an „integrated“ system. The first one represents a „mechanical“ product established by common documentation. The second one represents a qualitative shift, with a synergy effect that gives to entirety a larger value in comparison with a simple sum of its components. As a matter of fact, from a process-based model of all management systems, established within the QMS standard (ISO, 2008), Figure 2, two groups of processes are visible - horizontal processes of product realization that transform customer requirements into customer satisfaction, and vertical processes as support ones. Essentially, this model is possible to consider as a global PDCA cycle („Plan - Do - Check - Act“) (BSI, 2006; ISO, 2008; Raković, 2007a). Integration of individual management systems into an integrated one represents a method of improvement of effectiveness and efficiency of vertical processes.

![Figure 2 - Process-based approach to management systems (ISO, 2008)](image-url)
Particular elements of the PDCA cycle applied at management systems are as follows (BSI, 2006):

- **P (Plan)** - Management system policy, identification of legal requirements, establishing of objectives, responsibilities and authorities
- **D (Do)** - Implementation and operation control, management of resources, documentation and communication
- **C (Check)** - Performance assessment i.e. monitoring and measurement, evaluation of compliance, internal audits and handling of nonconformities
- **A (Act)** - Improvement through corrective and preventive actions and management review

In literature there are two theoretical approaches to IMS establishing - the first one, based on establishing of quality management system that is extended by other management systems (“step by step” approach), and the second one that means simultaneous establishing of all IMS elements („frontal“ approach). In practice, the former approach is dominant for several reasons (Raković, 2011b):

- Establishing of quality management system, as „universal“ management standard, establishes frameworks, principles and infrastructure that are useful in the future establishing of other management systems
- Establishing of IMS consisting of several management systems represents a very complex business endeavor - project, that requires appropriate knowledge as well as human and material resources, and it is not a natural thing for an organization to enter these activities without previous experiences
- Standards that define management systems are „generic“, prepared as „key for all locks“. It means that the same standard can be applied to any organization, large or small, whatever its product or service is, in any sector of activity etc. In such conditions, it is very difficult for organizations to recognize how to apply the standard’s clauses, even in case of one standard, let alone several of them
- In the first step, management systems are usually established in their respective basic forms and are continually improved during time. This is a permanent process that calls for serious engagement of both experts and all employees. Also, a certain time period is necessary to stabilize the topic as well as to recognize essential specifics of the organization
- It is very important for employees to accept the basic elements of all management systems within IMS, depending of their working positions. It is always a complex process because people do not accept any change easily; generally they are not ready to learn during their working life and are usually afraid of any changes in their status.

On the other hand, the frontal approach has its advantage just because of common elements within different management standards; it is more rational from the point of view of time and costs - it enables reduction in duplication within documentation, significantly reduces the overall size of the management system; we immediately establish all that is necessary to the organization; essentially, it is harmonized with the indivisibility of processes etc.

### 3. COMMON MANAGEMENT SYSTEM REQUIREMENTS

Generally speaking, each management system requires from organization to (Raković, 2007a):

- Explain how it works in the subject area
- Describe these activities
- Follow it in practice
- Document its activities

The first step requires the organization to explain how it works. It is very important to note that any management system does not deal with the question if this way of working is good or not - nobody forces the organization as regards its way of working, the way organization defines its business processes is verified on market, through its survival. In the second step the organization is required to describe its way of working, to make it accessible and visible to others in written form (on paper or other media).
The most important step is the third – the organization is required to obey the rules defined on its own. This is the most critical step in practice – the organization can find a consultant that will prepare documents, but implementation is its own obligation, nobody can do it instead of the organization itself. Finally, it is very important for the organization to provide evidence that this management system is in function with the help of records that document performing of the system.

The common elements for all management standards are as follows (BSI, 2006; Raković, 2011b):

- Documentation requirements. Each management system requires documents as manuals, procedures, instructions and forms (as basis for records). Some of these documents, especially the manual and procedures can be prepared in such a way to meet the requirements of several management systems.

- Management system policy. Generally, policy represents “overall intentions and directions of an organization related to (subject of particular management system) as formally expressed by the top management” of the organization. However, each management standard defines particular elements policy should contain as explicite statement. In case of IMS, there is practical dilemma how to prepare this type of the statement. It is not practical to prepare several documents, particular for each component management system. On the other hand, it is very difficult to include all these particular elements into one statement, within a scope of one page to be available and visible to all the stakeholders of an organization (customers, employees, shareholders, suppliers, financial institutions, business partners, society, state).

- Planning. It covers identification and evaluation of aspects, impacts and risks relevant to subject management system, identification of legal requirements and establishing of objectives (general, at the level of organization and particular, at the level of particular projects) that will be measurable and verifiable.

- Responsibility, authority, and communication. It means establishing of organizational structure, roles, responsibilities and authorities which enable establishing, maintaining and improvement of the subject management system. It is necessary to point out that all management systems require an active role of top management, with specific management representative(s) who, irrespective of other responsibilities, shall have the obligation to take care of this management system establishing and reporting to top management on its performances. Also, some forms of both internal and external communication (in particular cases) should be established within the organization as well as with its surroundings.

- Management review. This requirement is in direct relationship with establishing of objectives and management responsibility for each particular management system and the IMS as a whole. It means the activity undertaken periodically, at planned intervals (for example, once a year) to ensure suitability adequacy and effectiveness of the IMS to achieve established objectives. The main point of the review is to identify opportunities for improvement and the need for changes within particular management system or IMS as a whole including policy and objectives. It is based on some input elements (results of audits, both internal and external, stakeholders feedback, status of preventive and corrective actions, follow-up actions from previous management reviews, information on organization’s performances, results of evaluation of compliance with legal requirements etc).

- Provision of resources. Assignment of resources, both human and material is a fundamental assumption for establishing, maintaining and improvement of any management system as well as IMS as a whole. Without resources, all objectives are only a list of unattainable desires.
• Competence, training and awareness. All management systems requires from the people working for or on behalf of the organization to be competent on the basis of appropriate education, training, skills and experience for the tasks assigned to them. Also, it is very important to develop awareness of people related to significance of the subject management standard as well as IMS as a whole for the success of the organization and to motivate them to recognize their own particular interests within this success.

• Infrastructure. Each management system requires for an appropriate infrastructure to be provided and maintained. It includes, as applicable, buildings, workspace and associated utilities, processing equipment (both hardware and software), supporting services (such as transport, communication or information systems). Nowadays, of particular importance are local computer networks as well as communication via the Internet.

• Internal audits. Generally, in all management systems internal audit represents a tool that enables better recognizing of actual status of the subject system from the point of view of people that work within it, but competent to identify whether the management system conforms to the planned arrangements and whether it is properly implemented and maintained and adhered to. It means that the organization should educate an adequate number of internal auditors per each of component management standards and to establish and maintain an audit programme for conducting periodic management system audits. To enable IMS auditing, it is necessary to ensure an appropriate structure of the audit team, consisting of auditors who should cover all elements that are subject of audit. It is one of the areas in which integration enables recution of management system maintenance costs because the organization conducts one internal audit instead of several ones per particular management systems.

• Monitoring and measurement. The general purpose of these requirements in all standards is to determine the extent to which applicable requirements are being met. As a rule, it includes recording of information to track performance of relevant operational controls and evaluating of conformance with the organization’s objectives as well as the ability of the processes to achieve the planned results.

• Corrective, preventive and improvement actions. It means reviewing nonconformities or potential nonconformities, their causes; evaluating needs and possibilities to ensure that nonconformities do not occur (preventive actions) or recur (corrective actions), implementing of appropriate actions needed, recording the results of actions taken as well as reviewing the effectiveness of these actions.

Within the quality management system (ISO,2008), particular attention is paid to management commitment, customer focus, design and development, product realization, purchasing, production and service provision and customer satisfaction. Other management systems (BSI,2007; ISO,2004; ISO,2005a; ISO,2005b; ISO,2009; ISO,2011a) within the planning process pay particular attention to aspects, evaluation of compliance with legal requirements (legal framework), identification of hazards, impacts, risk assessment and risk management, as well as programs for attaining objectives, and the central question within the implementation is the operational control, readiness for emergency situations as well as incident investigation.

It is interesting that there are some elements not mentioned within standards explicitly, but unavoidable in their practical implementation (Raković,2011b):

• The Manual is explicitly mentioned only within standard ISO 9001, other standards do not specify this document directly. However, if you take into account that it is necessary to describe the scope of each management system, it is clear that the existence of the manual at the level of IMS is recommended. It enables to present in a
easy-to-survey way the main elements of all component management systems within the IMS, their interactions and specifics, common policies, processes, procedures as well as references to related documents.

- Design and development is a specific requirement within the ISO 9001 standard and represents a justification of a product and way of its realization (Raković, 2007b). However, it is very difficult to imagine that in this process we do not take into account the requirements related to environmental protection, occupational health and safety as well as energy efficiency. For example, a car manufacturer should take into account the reduction of harmful gases to a minimum, rational consumption of fuel as well as systems that improve the safety of participants in the traffic (brakes, air pillow, etc).

- Clauses of the standard ISO 9001 require from the organization to ensure a customer requirements review from the point of view of its understanding as well as capabilities of organization to meet them. As a matter of fact, this requirement protects a customer from the damage that organization could cause to him. Similar requirements do not exist within other standards but it is logical that this review should take into account the environmental, occupational health and safety as well as energy efficiency aspects.

- Clauses of the ISO 9001 standard pay significant attention to purchasing i.e., supplier evaluation. Other standards do not have this type of requirements explicitly, but it is clear that these requirements should be taken into account to avoid „buying of problem“ through procurement of a product.

On the other hand, other standards treat risks through aspects, hazards, harmfulness, risk assessment etc. The ISO 9001 standard does not treat this topic explicitly, except for some statements within the preamble of the standard. However, the purpose of all management activities is to take preventive actions to prevent problems - each of them is risk management oriented (Raković, 2011a).

It is necessary to mention that some activities now are in progress within the International Standardization Organization (ISO) with an idea to define the harmonized form of ISO standards based on their common elements. At the end of 2011 the ISO Guide 83 (ISO, 2011b) was published as a response to complaints of standards users that it can be confusing that a business’s operations can be influenced by several management standards that are written and organized in different ways.

It is expected that particular standards will be revised as per this Guide in the years to come (for example, the ISO 9001 standard is planned to be revised in September 2015) and this will mitigate difficulties in IMS establishing.

4. CASE STUDY: ENTEL

The core business of company Energoprojekt-Entel p.l.c., Belgrade, Serbia (hereinafter called: ENTEL) is Engineering Design and Consultancy Services related to Projects in the fields of Energy, Water, Telecommunications and Environmental protection. Categories of ENTEL’s products are design documentation (studies, tenders and technical documents), provision of consultancy services and occasionally customer specific software development.

The IMS in ENTEL has been established as per the first approach i.e. “step by step”. In the first step, in December 2001, the Quality Management System (QMS) was introduced as per ISO 9001, certified by Lloyd’s Register Quality Assurance (hereinafter called LRQA). The establishing of QMS was coordinated by the project team consisting of 50% members from the company and 50% members from one consulting company. Within the first certification three-year period the project of the QMS re-engineering had been implemented based on project principle and “breakthrough” on its own i.e., without any engagement of any consultant company, thanks to the personnel structure of the company (Raković, 2004). The duration of this project was 10 months; it was based on the results of internal and external audits, suggestions of employees and on summarized practical experiences in the application of the quality management system.
The project was coordinated by the Head of QMS department as the project manager and main people from several organizational units have been included and their engagement was treated as engagement at the best paid external contract. As a result, all the documents of the system were harmonized and updated and a valuable basis has been established for all future activities in the development of the system.

During the first two three-year certification cycles the emphasis was on the consistent performing of quality management system in accordance with specifics of the company, with the main idea to establish a basis form expanding the system with other management systems. In these activities, an important step has been made to business excellence systems, resulted in participation at competition of FQCE for national award of business excellence „Oscar of Quality“ in 2005 and winning the main award in the category of medium and small enterprises (companies up to 250 employees). Details related to ENTEL’s QMS with emphasis to project management aspects are given in the literature (Raković, 2011c).

Establishing of the Integrated Management System (IMS) was started during the third certification cycle, by establishing the Environmental Management System, as per the ISO 14001:2004 standard and its certification in the middle of the 2009. Three areas i.e. groups of aspects, in which ENTEL has impact to environmental protection have been identified:

- Design documents preparation. ENTEL recommends appropriate actions but its application is under a direct responsibility of the client.
- Construction supervision. Actions are the direct responsibility of the contractor, the obligation of ENTEL as a consultant is to point out all defects that could cause an adverse impact to the environment.
- Business building. ENTEL has a possibility of direct application of actions related to solid waste control, electronic waste control, control of water and electricity consumption, in cooperation with other companies from the business system of Energoprojekt.

Further improvements of the IMS continued towards the end of 2010, by establishing the Occupational Health and Safety Management System, as per BS OHSAS 18001:2007. The certification of this management system originated from activities related to occupational health and safety topics based on legal requirements issued several years ago that created fully new approach, with new responsibilities for both employers and employees. As per these regulations, the central document for organizations is the “Act on health and safety risk assessment” in which hazards and harmfulness are identified, risk level is assessed as well as particular objectives and programs for OHS are foreseen for each working place. In case of ENTEL, five groups of working places are identified (ENTEL, 2012) - administrative / technical jobs in business building (management, designers), administrative / technical jobs in projects i.e. construction supervision, the driver of a motor vehicle and jobs within the kitchen. To enable a more efficient application of this regulative, an external organization has been hired for a short period of six months. These activities included education of people for safety work, provision of first aid sets, provision of personal protection equipment (helmets, clothes, shoes, gloves, glasses etc), measurements of working conditions (temperature, humidity, air circulation, illumination), measurements of quality of earthing (at sockets as well as distribution cabinets).

Based on the fact that ENTEL carries out a significant part of its business activities within the energy sector, it was natural to establish an energy management system as per appropriated management standard. In the first step, ENTEL decided to certify its energy management system as per European standard EM 16001:2009 - system was established during 2010 and certified in the middle of 2011 by LRQA. Meanwhile, new international standard ISO 50001:2011 has been issued and transfer to this standard was made in the middle of 2012.

Similarly to EMS standard, both in OHSAS and EnMS standard aspects, objectives and
programs cover three groups of ENTEL activities - design document preparation, construction supervision as well as business building activities.

It is necessary to mention that the topic of HSE (Health, Safety and Environment) has been very actual in the last years at the markets in which ENTEL is present. More rigorous requirements both for contractors and consultants are established and in some cases particular meetings are held at projects related to HSE topic, in parallel with project progress meetings.

During 2012 ENTEL established the Information Security Management System as per the ISO 27001:2005 standard and certified it in November 2012 by LRQA. The decision to establish the ISMS is based on two main reasons:

- Information protection is very important for an organization that works in the conditions of market competition
- Information and communication technologies have a very important role in ENTEL’s activities, with all positive and potentially negative consequences that this may have.

In comparison with other management standards, the standard ISO 27001 is atypical, because it consists of basic requirements and additional ones, i.e., 133 controls specified within Annex A of this standard. Apart from the procedures required as per this standard (IT infrastructure, risk management, incident management, business continuity), it is necessary to prepare and maintain the following specific records:

- Registry of information assets
- Risk assessment, based on some risk assessment methodology, taking into account information value of asset, the probability of threats and the impact these may have on assets
- Risk treatment options (acceptance, avoidance, transfer or mitigating risks)
- Statement of applicability (SOA) with an overview of implementation of each of the 133 controls or justification of its exclusion
- Security event / incident report
- Business continuity plan

In Chapter 3, considering management system policy, it was mentioned that it is very difficult to prepare this statement as a unique one because it is necessary to include all particular elements required by particular standards into one statement, within the scope of one page. Figure 3 shows a practical example of ENTEL’s IMS policy with pertaining elements of QMS, EMS, OH&S, EnMS and ISMS.
The IMS documentation consists of the IMS Manual, 27 procedures (Table 1), 23 Instructions (Table 2) as well as 114 forms (ENTEL,2012).

Table 1- List of IMS procedures

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<tr>
<th>IMS Procedure Title</th>
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<tr>
<td>EN-09P-01</td>
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<td>EN-09P-02</td>
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<td>EN-09P-07</td>
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<td>IMS Instruction Title</td>
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<td>EN-09I-02 Coordination of communication</td>
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<tr>
<td>EN-09I-03 Techno Economic Program (TEP) for project realization</td>
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<td>EN-09I-04 Quality, Environmental Protection and OH&amp;S plan preparation</td>
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<td>EN-09I-05 Design documents indexation</td>
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<td>EN-09I-06 Design documents - General part</td>
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<td>EN-09I-07 Annex of health and safety and working environment protection</td>
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<td>EN-09I-08 Drawings preparation</td>
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<td>EN-09I-09 Design documents binding</td>
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<td>EN-09I-10 Design documents archiving</td>
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<td>EN-09I-11 Tender documents preparation</td>
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<td>EN-09I-12 Pre-feasibility study preparation</td>
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<td>EN-09I-13 Feasibility study preparation</td>
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<td>EN-09I-14 Environmental assessment study preparation</td>
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<td>EN-09I-15 Preliminary design preparation</td>
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<td>EN-09I-16 Basic design preparation</td>
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<td>EN-09I-17 Final design preparation</td>
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<td>EN-09I-18 Detail design preparation</td>
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Table 2- List of IMS instructions
In this way, ENTEL has implemented its strategic decision to establish the IMS system in accordance with its business activities consisting of quality management, environmental protection, occupational health and safety, energy management and information security. This decision has been implemented during several projects of establishing, maintaining and improvement of particular management systems within a period of more than ten years. The main aim was to make the firm recognizable as a company:

- That harmonizes its activities with applicable legal requirements in these areas
- That is engaged in its consequent implementation
- That assists its clients in their activities related to subject areas
- That meets and exceeds requirements, needs and expectations not only of customers of its products, but also of all employees, Energoprojekt business system, owners, suppliers, local community and the state, as completely, effectively, efficiently and reliably as possible.

In the previous chapter it has always been mentioned that particular standards are “generic” and companies usually have a problem to recognize how to implement these general clauses in their particular conditions. In practice, additional problem appears, also it is related to an element common in all management standards. Namely, in all standards it is important to establish measurable and verifiable objectives to enable monitoring and measurement as well as improvement of processes. However, in standards there are no instructions how to implement these requirements in particular cases. Some particular documents are prepared to enable organizations to identify more suitable performance indicators and to include them into their business processes. According to the author’s knowledge and experience it is the most critical point in the application of these standards. It is especially difficult to find indicators that cover several standards within an IMS.

5. CONCLUSIONS

In this paper, some aspects of the approach and implementation of a project of IMS establishing in an organization are considered. This is illustrated of the example of a particular organization. It can be concluded that establishing of IMS should be a strategic decision of an organization, in harmony with its business activities. The implementation of this decision represents a complex project consisting of several projects related to particular management standards, their establishing, maintaining and improvement. In this way, close relationships among strategic management, project management as well as particular disciplines of management are demonstrated.

REFERENCES

Information Security Management Systems – Requirements


Abstract: The paper explores the importance of branding for new products as well as the impact branding has upon a successful management of the company.

Key words: Branding, Product, Marketing, Brand selection.

1. INTRODUCTION

The issue of branding has in the last years become a key issue, primarily for two reasons. Firstly, we are overwhelmed with a largest number of products, services, companies and brands ever, whose task is to distinguish themselves from the host of others, to be different, successful and above all, loved and desired. The behaviour of companies and the quality of their products gradually build confidence in consumers. Secondly, the most valuable property of the company is no longer the material property. Factories, trucks, warehouses, raw materials, employees and even the headquarters of the corporation are no longer the signs of corporate success. Today nobody wants to own only a factory; everybody wants to own a brand.

The most important function of marketing today is considered to be the very creation of the brand. Furthermore, a large number of the world’s leading marketing experts maintain that the basic function of marketing is only to build the brand. Successful brands mean primarily quality products that satisfy the consumers’ needs and desires. However, they also mean communication with consumers that is an important component of brand building.

Brand value building and sustaining require that a brand be built that provokes favourable, strong and unique associations in the consumers’ minds. These are the sum of all the contacts the consumers have with the brand, and extend as far as the experience the consumers have with the brand. These contacts may be a result of various promotive activities the companies undertake, including advertising in mass media, improvement of sales, sponsorship of sports or entertainment events, web sites and activities of direct marketing (letters, brochures, catalogues). Customers can also have contacts with the brand or receive information on it in shops, at sales points; through articles or stories they see, hear or read in the media, or through contacts with the company representative, such as the salesperson. Marketing communications can contribute to the brand value by making the brand memorable and also by shaping the image of the brand.

2. TRADE MARK AND BRAND DEFINITION

2.1. THE CONCEPT AND DEFINITION OF TRADE MARK AND BRAND

The notion of trade mark covers the products sold under the trade mark of the company. This definition means that we deal with commercialised trade marks that mark the articles the company trades in, that is, keeps on the shelves of its salespoints. Two main parts of the trade mark are the label and the logo. The name can be spoken, and the logo can be recognized. (Lacoste: the picture is the logo, the name is the label).

The company uses the trade mark to identify the goods it trades in and differentiate it from the same/similar traded in by other trading companies. The origins of trade mark are in the USA. Trade mark helps the company fortify its position on the market and raises barriers to
competition to prevent it from capturing the market for the goods labeled by a certain trade mark. This is simultaneously a variable by which the company successfully positions itself on the market, by which it achieves the effects of differentiating its goods using the trademark. The motives that encourage companies to develop the mark are the following:

- Conducting a strategy of differentiation and positioning on the market, as well as achieving competitive advantage and protection;
- Tendency to autonomy and concentration in trading with an increased use of the opportunity for backward integration;
- Achieving exclusiveness of offer;
- Achieving autonomy in introducing new products and increasing trade margins, and at the same time eliminating the producers’ measures directed towards a respective area, and adverse to the interests of trade.

A quality implementation of the marketing strategy requires that the customers’ needs and desires should be satisfied efficiently and effectively. The role of the brand is very important in conveying the meaning of the product concept, as a way to identify the manufacturer, the salesmen, the consumers, and others. A successful brand can efficiently convey the product concept and facilitate its identification. Thus it makes it easier for the customer to buy and also reduces the costs of search. It becomes a symbol that has a number of attributes for the customer. The brand makes it possible for the public to create an image of the product that usually means considerably more to most consumers than its use value.

A product is a result of physical or mental work, created for the purpose of satisfying consumers’ needs. The production programme and the products in the manufacture process mean what sales product range and sales items mean in trade. Accordingly, the product range of a company comprises all the goods that are the subject of its business activities. The product is the primary instrument of marketing and is reflected in sales item/article in retail sales.

The customer is the starting point in the product policy, because the policy is created for the purpose of satisfying the customer’s need. An appropriate product policy and a planned approach to the management of all its dimensions, with a corresponding combination of other marketing mix tools into its optimum expression, helps the company achieve competitive advantage on the market against its competitors. In order to achieve success in the product development and sales management, it is necessary that a large number of decisions about it should be made. Very important characteristics of a modern product by which the product is successfully positioned on the market are the following: quality, design, packaging. In developed trade conditions they take the role of important subinstruments of marketing increasingly used to win competition wars. [12]

One variable in this struggle for the market position in the developed market conditions is the brand itself. It has a promising future, especially in the area of trading. Brand offers numerous advantages to any participants in the chain of social reproduction as well as an important investment that certainly wins. Using the brand the company can differentiate its product against the same or similar products of other companies and thus earn approval by its customers that can in time evolve into loyalty towards the brand.

Brand is a modern feature of the product, the feature of the 21st century and a modern characteristic of the product. It assumes the attribute of a very important marketing tool
for any entrepreneur. Hence it should be approached strategically in management and right decisions on its development should be made. Brand management should be an integral and equal part of the entire strategic management of the company. [12]

The American Marketing Association defines brand as the name, concept, symbol or design, or the combination of these, whereby it identifies the goods or services of one vendor or a group of vendors and differentiates them from those of the competition. Brand is the entire sum of all that we think or feel about a product, a company, an institution, a person or a place. Brand is everything that gives us a certain promise and that has certain clearly defined and recognizable values. Thus brands can be not only products, but also states or individuals. [12]

Brand is a unique and identifying symbol, name or trade mark or design that is meant to distinguish the products or services from those of the competition. It simultaneously acts as a physical or emotional “driver” that builds a relationship between the consumer and the product/service. [7]

Brands identify the source or the creator of a product, and enable the consumers – either individuals or organizations – to enforce responsibility on a certain distributor. Customers can rate the same product in different ways, depending on how it is branded. In modern market conditions, the brand stands for clarity, assertion, stability, status, belonging.

The essence of the brand is in creating the brand – customer relation. Successful brands are those that possess a set of brand values that distinguish them as superior to other, competitive brands. To build a brand, it is necessary to understand the functional and emotional values that drive the customers when choosing among different brands, as well as the capacity to combine these values in a unique manner. Brand is a unique idea, concept, attitude, emotion or concept that has become an active part of the customer and that is formed exclusively in the customers’ minds. Brand has to create a strong and lasting identity of a product or a service; it has to sublime the specifics of the trading society and encourage the feelings of confidence, usefulness, benefit and safety. [14]

It is not a tangible thing, but rather something in the heads, in the minds of the customers. It is the intangible, the first the consumers think of when a name of a brand is mentioned. Large companies exceed the functional and tangible advantages and characteristics of their products creating positive emotional connections more valuable than anything else. Emotional component is very important in the 21st century. Today brand has a character of its own, formed by shaping the following elements:

- Brand attributes – what is brand?
- Brand value – which are its major values (through brand equity that can be tangible and nontangible value)?
- Brand personality – if brand should be a person, what kind of person would it be?
- Brand promise – what does brand promise a consumer?
- Brand benefit – what does the consumer gain by this brand, and
- Brand essence – the heart and the soul of a brand – the definition of the brand that distinguishes it from any other(s). [17]

2.3. CORPORATE BRAND

The building of corporate brand starts even before the company is set up. The first function, defining the corporate personality, has to do with the brand personality identification. This involves activities whose purpose is to define the corporate personality, ownership planning, corporate mission and corporate philosophy, define fundamental values, develop ideas, plan the company structure and characteristics and decide on the company name. A successful process of brand building is based on the mutual values of the company that facilitate both the perception of the corresponding brand and the coherent activities in the entire organization. Although fundamental values are perceived as relatively static, they are not, because they change in time, especially in
dynamic environments characterised by developed technology.

The strategic planning through brand means using brands in strategic planning. It involves generating a brand vision and connecting this vision to the organizational culture and the corporate image. All these result in translating the business concept, values and philosophy into reality, which, together with the corporate brand, represents an important strategic value for the company. Well established brands can improve the company’s competitiveness and generate growth and profitability if the brand-based strategic orientation is a constituent part of the formulated strategy.

2.4. DIFFERENCE BETWEEN CORPORATE BRAND AND PRODUCT BRAND

Corporate branding differs from product branding in several aspects. The first and foremost is that the branding-effort focus shifts from the product to the corporation. Naturally, the product and the company are connected in the corporate brand with additional economic values of different products and services the company offers. A broader range of corporate brand, however, pushes the brand reasoning significantly beyond the product and its relationship with consumers and buyers. Another contrast between the product and business branding is the difference as regards who connects the brand with the term or with the attracting and support. While the product brand mainly aims at customers and clients, the corporate brand also responds to the formed image and supports it in the organization and among community members, investors, partners, suppliers and other interested partners (all the company stakeholders). Instead of responding to the customers through various individual products and services with different names of trade marks, the corporate brand rather responds to all the organizational stakeholders and all the products and services they provide to one another throughout the corporation. [4]

If the brand is conceived only as an input or an output of a perspective, it may result in an imbalanced strategy and thus lessen its chances in a longer term. In case the corporate brand is one extreme where corporate values extend over different groups of products that can best be seen from the financial aspect of a brand (e.g., AXA, Halifax) or a global brand (e.g., Nokia, Virgin), then the other extreme is the brand with a unique name that is not easy to recognize, but is an association to a certain company. The examples for this are the washing powder Ariel and the Fairy detergent, both the products of Procter & Gamble, which can only be seen if one looks at the attractive packaging. Between these two extreme positions are brands with characteristic accents on corporate perception. For different reasons they go through corporate branding. For example, the increase in costs for individual brand lines promotion should be limited, or the management of the category where the importance is attached to the promotion of the products that are on sale in retail stores, rather than to the individual brand should be examined.

There are two different attitudes on whether it is good for the company to build a corporate brand exclusively or to create a number of product brands. As mentioned above, the company may decide to create a corporate brand, that is, a strong, recognizable name of the company, as is the case of Nokia, Apple, Virgin. Any product or service provided by such a company is recognizable and closely related to the company. Accordingly, the costs of advertizing and raising awareness in consumers are significantly reduced. But what happens if the company reputation suffers? Then all the products coming from this company are, by a rule, endangered, which is not good.

When a company creates a number of different brands, not linking them strictly with its own name, these brands need not lose reputation when the company loses it. This type of creating the name is, however, considerably more expensive, because in case of any new brand the company launches, it requires a lot of money to appropriately position the brand in the consumers’ minds. On the contrary, the corporate brand can always rely on the “past glory” in such cases.
It is the responsibility of those who manage or start up a company to decide whether they will launch their products via a corporate brand (company name) or as an individual product brand. As we have already mentioned, both ways do have their advantages and disadvantages. It is the market that sets the conditions and the consumers assess the value. In any case, the company is successful when it has its own brand, because the brand is something that earns an income and lasts. Whatever its characteristics.

3. BRANDING PROCESS

Brand defining and creation is a key function of the marketing mix. The branding process involves a large number of subprocesses and activities oriented towards brand defining and creation. The first decision to be made in the branding process is whether the brand for certain products should be introduced or not. Rarely do any goods enter the market without a brand nowadays. That is why the decisions on branding are made frequently. This becomes a common practice, especially in case of launching a new product. The retailer has to mark the brand, because in case such a product did not have a brand, it would sink among a multitude of other products and brands and could not be identified as new. The identification is provided by the brand that is later aggressively promoted. The development of a new product is a risky job, hence the branding process plays an important role in the company’s efforts to create a new product, promote it successfully and achieve certain results in sales.

3.1. BRAND SELECTION AND CATEGORIZATION

The selection of brands for products is of great importance for their future success. The whole job includes the conduct of reasearch activities both on the market and within the company, and the results are tested by the consumers. A well chosen name for the product brand should have the following features:

1. It should be short, easy to pronounce and read
2. It should be recognizable and easy to remember
3. It should appear agreeable when read or written
4. It should sound pleasant
5. It should not be obsolete
6. It should satisfy to the packaging and labelling requirements
7. It should be genuine
8. It should be easy to pronounce in a foreign language
9. It should not be offensive
10. It should stimulate sales
11. It should be adaptable to any media [17]

Depending on the point of view, the brand can be categorized in a number of ways. Brand categorization aims to analyse the subjects the brand refers to, the geographic diversification of the brand, whether the brand can become a long-term brand, what its role is in advertizing, what its value is, what reference it can have in comparison with other brands and which category it belongs to as regards the customer loyalty and the market share. [14]

As regards the subject to which it refers, we have the following categorization; that is, the brand can refer to:

1. Organization (company, non-profit organization, non-governmental organization, various associations). An important role in building an organization as a brand belongs to public relations. Organizations make efforts to create a unique image of themselves, developing their programmes, through their activities, products, etc.
2. Product (e.g., Coca-Cola, Milka, Head & Shoulders...). The brand concept is traditionally linked with physical goods.
3. Service (e.g., Reiffeisen Bank, McDonald’s, the Hilton, the British Airways...). The service sector has achieved most favourable results in branding. The service quality generally depends on the people involved in the process of their provision.
4. Person (e.g., David Beckham, Salvador Dali, Madonna...). Of all the brands throughout the world, some of the most powerful belong to the elite group of “human brands”, including people such as David Beckham, Kylie Minogue, Eric Cantona, Jamie Oliver, etc.

5. Place/location (Hawaii, Paris, Mount Everest...). The place as a brand is meant to produce positive, desired associations in the minds of the people. The brand name is linked to these locations. The development of tourism, of international transportation contributed to the development of geographic location branding.

6. Idea (healthy food). A large number of ideas are branded by non-profit organizations too.

According to geographical diversification, the brand can be:

1. Local – present in a small market segment.
2. National – the brand is present in one country; the entrance of a brand into a market is preceded by the research of that market.
3. International – the brand is present in a number of countries; these are generally neighbouring countries or countries with similar consumer habits.
4. Global – the brand is omnipresent; these are powerful brands (Coca-Cola, Sony, Nike...) that require investing a lot of money and time and also the company’s ability to differentiate its strategies in certain market segments. [4]

3.2. BRAND QUALITY

When a trader decides to launch a brand, he has to make a decision about the quality the brand will guarantee. The basic principle of branded products is that they are quality products.

The products have to be quality products and reliable in order that they should be efficiently embedded into the product system. The trader may decide in favour of an average quality product, too, which would result into a lower price policy as well as in different measures of promoting of that trade mark. The core of the quality is that it should be a steady quality that will not vary, so that the customers should be guaranteed a product of constant quality. A large number of customers chose one brand or another because of its quality.

3.3. BRAND DIMENSIONS

The two brand dimensions are breadth and depth. The brand breadth is the number of product categories the brand covers. It can include a large number of product categories, the entire production programme, or only one product category. The brand depth is the number of brand products within one product category. The brand area can be deep when it includes all the products in the product category, or it can be shallow when it covers one/several products. The company may make some changes in the brand dimensions. Such changes are a natural consequence of the market conditions and the opportunities offered to the retailer as regards the brand policy management.

3.4. DECISION ON THE BRAND NAME

The basic characteristics of a good brand are the following:

1. genuineness and contemporaneity,
2. clarity and comprehensibility,
3. brevity and substantiality,
4. seriousness,
5. lack of epithets,
6. memorability and adaptability to visual and graphic manipulations. [12]

The first decision in branding strategy is that of naming the brand. The selection of the name is often a most difficult and a most complicated moment in creating a product and in its branding for the market. The brand name can be expressed orally, visually and in writing. It can consist of words, numerals and letters. On the basis of the name follows the development of a logo, the packaging, the promotion campaigns, etc. When naming the brand, the following should be kept in mind: the name should be
short – the shorter the name, the easier it will be remembered (Esso, Shell, Daz, Mini,...).

1. The name should be simple, i.e., it should have as few letters as possible, and the syllables should repeat, if possible, e.g., Coca-Cola. For example, the UBS bank, the third largest bank in Europe abandoned its familiar names UBS Warburg and UBS Paine Webber for a simple name UBS.

2. The name should suggest a category – in our circumstances the names VeratNet or EuNet as providers, ComTrade or CoRes as computer distributors are examples of the names that can be linked to the category to which these brands belong.

The name should be simple – it must be clearly distinguished from others in order that it should not be mistaken for another name that is pronounced in a similar way.

3. The name should be resonant – the name should have a simple and unique melody. This is essential in pronouncing the name because we want it to be remembered.

4. The name should be easy to pronounce – the problem arises with the names we want to place on the world market. In a majority of cases the name that is easily pronounced in one language is easy to pronounce in any other world languages, such as Honda, Ford, Fiat, etc.

Generating ideas for the brand name may include the company management, the employees, distributors, customers, specialised consulting agencies, as well as a name generating software. Certain companies specialised as consultants in naming the product. These companies use brainstorming techniques, as well as huge databases organized according to associations, sounds and other qualities). Market research is used to test associations, preferences and easiness to remember and pronounce.

The name of a brand can be:

- Personal (family) name – McDonald’s, Ford, Rodić MB, Cadbury, Channel...
- Acronym – IBM, IHOM, BIP...
- Explanatory names – Bitter lemon, Organic Valley, Friskies, Body Shop...
- Words taken over (adopted) – simple words used in a simple way (Delta, Yahoo, Apple, Next...)
- Tailored names – Nivea, Sony, Google...
- Alphanumeric names – consisting of numerals and words: 7up, 3in1 Jacobs...
- Funny names – unusual and easily attracting attention: Double booble...
- Sentence/phrase as a name – the name consisting of a number of words: Wash and Go...
- Foreign names – a company may adopt words of foreign origin, however, in selecting them the companies should think about the customers’ culture and attitudes: lance means a spear (Lancia). Lego means “play well“ in the Danish language.
- Arbitrary names – these are names that are totally different and make an effect on customers by their uniqueness: Blue Tooth, Radish...
- Suggestive/symbolic names – using a word that shows a positive connotation with the product: Jelen, Lav. [1]

Naturally, the company has to check whether the name it decided upon is already registered, to check the availability of the Internet domains and the meanings in other languages. When a brand achieves a good positioning, its name may become a synonym for a given product category: aspirin – Aspirin, jeep – Jeep, gillette – Gillette.

3.5. BRAND PRICE

Price plays a specific role in branding and is a financial verification of the brand strength in comparison with the competition. The brand price should be in relation with the benefits the brand offers. Overpriced products will not be rewarded on the market, whereas a brand with a low price may create an unfavourable image. The price strategy distinguishes the company brand from the one offered by the competition.
Price is very important because it affects the brand image. People still follow the old cliché: “It has to be good when it is expensive“. A higher price tells about the product quality, and if the company wishes its brand to be accepted as the best in its category, it certainly should not price it low or organize promotion with discounts. If a brand is the cheapest in its category, the question is what awareness people develop about it?

The brand and the price are often a reflection of each other. If we say that the price of a car is €60,000, the message we send is the same as it would be if we said that the car was a Mercedes, a Lexus, a Jaguar or a BMW. The brand that combines a high price and a reputation of a high quality product or prestige can capture a unique position on the market. The brand that establishes a status of a market leader can use the premium price strategy. Thus the Harley-Davidson company asks a three times higher price for its motorcycles than the competition whose motorcycles have very similar performances. Their customers do not purchase a motorcycle, they purchase the name Harley-Davidson with all the perceptive associations connected to this name.

3.6. BRAND DEVELOPMENT STRATEGY

The strategic goal of brand development can be short-termed or long-termed. The short-term goal is oriented towards increasing the margins, that is, towards realizing as big a difference as possible in the price, whereas the long-term goal is oriented towards building a steady and powerful trade mark. In case of brand building, full attention should be paid to creating conditions for building a steady brand, and these conditions are:

1. establishing steady relations with suppliers
2. building retail infrastructure
3. development or modernization of retail techniques and technologies
4. modernization of retail outlets
5. personnel education
6. creating an adequate organizational culture in the company. [17]

The brand strategy does not mean only the decision on the name selection. As a primary expression of communication identity, the brand has to clearly reflect a defined set of values the company promotes. In case this association lacks, the brand will not be in a position to perform its strategic role in the process of business integration. The strategy is a unique and sustainable way of value creation.

The strategic management of the brand is a systemic approach by which the brand is positioned in the customers’ minds, in comparison with the competition. This process begins with the definition of the brand vision which depicts the future state of the art in which customers are fully aware of the brand. Following the vision, the brand mission is defined. The brand mission reflects the purpose of the brand existence, the brand consumers’ satisfaction. The mission is the basis on which the brand goals are defined, and they can be quantitative and qualitative. The former are about the scope of brand sales, its market value, etc. The latter take into account the customer-brand relation, that is, the extent to which the customers’ expectations are satisfied, the creation of positive associations. Then the brand strategy is defined.

Every brand has to have a long-term vision about where it would like to be “realized“. Without a vision, the brand cannot succeed. The vision involves highly-set, ambitious goals that inspire the employees so that the brand can be successful.

Brands with high-set goals often happen to be on the top: Wall-Mart, IBM ... Wall-Mart began with a little shop in Arkansas. When he started, Sam Walтом was only 27, and his vision was to build a first-class retail company. Today, Wall-Mart sales amount to $260 billion.

Building a powerful brand requires careful planning and a large, long-term investment. The challenge facing the companies concerns the optimization of these investments. The branding strategy sustains the number and the nature of general and distinctive elements of the
brand applied to different products the company sells.

3.7. BRAND PORTFOLIO

A relevant concept in branding, in addition to brand extension, is the brand portfolio. Some companies choose to develop one brand, while others invest in creating and maintaining a highly-diversified portfolio. The brand portfolio is a set of brands and brand lines from a certain category that a certain company offers to its customers. [11]

The primary goals of a brand portfolio manager is to capture important market segments by positioning his brands. In practice, this is a rather complex task. A good example of how a brand portfolio can help retain customers is the Conde Nast publishing house. In addition to numerous other names it has the Teen Vogue and Vogue in its portfolio. The children who used to read Teen Vogue, read Vogue when they grow up. This type of brand hierarchy enables the Conde Nast company to retain the brand loyalty even though the customers’ needs change. The customers simply change one brand for another within the same portfolio. This success of the brand portfolio is based of the differentiation principle.

Large portfolios can strengthen the negotiating power when it comes to suppliers. A larger presence on the store shelves can increase the competitive advantage of the company. An optimum brand portfolio is the one in which each brand maximizes its value when in combination with all the other brands in the portfolio. Potential changes that can be made in a brand portfolio are the following:

• Introducing a new line of brands
• Abolishing a certain brand line
• Introducing a new brand within an existing line
• Abolishing a certain brand within an existing line.

The portfolio is too narrow if profits can be increased by adding a new brand line, and vice versa, it is too broad if profits can be increased by abolishing certain brand lines. In case customers do not accept a certain brand line or in case the competition pressure is so strong that it is not possible to sustain a competitive market position, the company should reconsider the possibility of abolishing the line or focusing upon other lines.

3.8. BRAND LIFE CYCLE CONCEPT AND STRATEGIES

The brand life cycle shows that the brand goes through different phases and therefore it is necessary that the brand strategy be changed. The basic idea of the concept is to define different phases of the brand life cycle in dependance of its sales scope.

These phases are as follows:

• development,
• launching,
• growth,
• maturity,
• decline and
• revitalization. [13]

The organization should formulate different strategies, depending on the phase of the life cycle in which the brand is. While products can reach the end of their life cycles, brands need not, if an adequate strategy is implemented.

3.8.1. BRAND DEVELOPMENT

This phase includes market research, competition research, development of the elements of communicative identity, development of an integral brand strategy and its implementation in the corporate strategy. Development largely depends on the talent, knowledge and skills of the people involved in the brand creation process. It is in the development phase that the foundations of the future brand strategy are set, on the basis of the customer and competition analyses. In case the customer and competition analyses are not adequately conducted, the brand strategy will rest on shaky basis, which can result into a failure in launching the brand on the market.
3.8.2. LAUNCHING
For a new brand success, this phase is of decisive importance. Here the profits are either negative or low, the costs of promotion aimed to raise the customers’ awareness of the brand are high. When launching a product, and this takes a lot of time, attention is mainly paid to functional benefits, and one of the major success factors is innovativeness. These are most often incremental innovations the companies introduce: improvement of production, distribution, added value of the product, method of business doing...

The time when the product should be launched on the market should be determined very carefully. An early launching may prove profitable. Research has shown that the products that appeared with a six months delay – however within the planned budget – earned 33% less profit on an average in the first 5 years; the products that appeared on time and exceeded the planned budget by 50%, reduced their profits by only 4%. Brand pioneers such as Coca-Cola, Campbell, Hallmark and Amazon.com have ensured a permanent market domination. [11]

The advantage of pioneers, however, may not be important or may not be permanent if the product is too raw, if it appeared before the really high demand for it emerged, if it is “stopped” by a managerial incompetence. Thus brands such as Newton (personal digital assistant of the Apple company), Raynolds (stylos), Osborne (negotiable accounts), pioneers on the market, were ousted by those that came in later.

It is in this phase that a decision on a geographical dimension of brand launching should be made; namely, whether we should decide in favour of global standardization or in favour of local adjustment.

3.8.3. GROWTH
This phase is characterised by a fast growth in sales that may attract competition to try to accomplish the same. Incomes increase because new customers buy the brand and/or the increase in purchase rate is due to the existing customers. Advertizing costs of the company are still very high, however, now this is because the company wishes to create the brand preference. This is the phase in which the brand personality and image are created. Further on, the market expansion strategy is implemented and it can include:

1. placement of the brand on new geographical markets, while strengthening the position on the existing markets,
2. product quality improvement and adding new characteristics to the product,
3. adding new models and products that can serve as “wing players”,
4. increase in the distribution coverage and entering new distribution channels,
5. price reduction in order to attract the next level of price-sensitive customers.

3.8.4. MATURITY
In the maturity phase the brand is under a lot of pressure. Competition is fierce and all competitors struggle to achieve as much consumer loyalty as possible. The sales growth rate will slow down in one moment. A majority of brands are in this phase, hence the task now is how to solve the problem of mature product marketing. The Japanese have proved that industries that are generally perceived as mature – automobile manufacturing industry, motorcycle manufacturing industry, television set manufacturing industry, watch manufacturing, camera manufacturing industries – are actually not (mature), as they managed to find ways to offer new value to their customers.

In the maturity phase the company may choose to modify the market, to modify the product, or to modify the marketing programme.

A) MARKET MODIFICATION
The company may try to expand the market for its mature brand working on two factors that make the sales scope: the number of brand users and the customer use rate. The company may persuade non-consumers to start using the brand (for example, the company may try to increase the number of users by persuading people to use the floss thread, since statistics
shows that only 24% of households use it). The company may attempt to increase the number of customers by capturing new market segments. When the Goodyear company decided to sell their tyres through Wall-Mart, Sears and Discount Tire, it increased its market share from 14% to 16% in the very first year. The company may increase the number of customers by attracting the customers of the competition. The scope of sales can be increased by persuading the actual users to use more of a given product, 1. to use the product in more occasions (“Use Kodak to take a photo of your pets too”); 2. use the product more on any occasion; 3. use the product in new ways (Fit yoghurt as natural fat burner).

**B) PRODUCT MODIFICATION**

The company can implement the following options:

1. quality improvement – increase the functional benefits for the customer, by launching a “new and improved product“ and promoting the product as “stronger“, “larger“ or “better“. This strategy is successful on condition the quality is really improved and provided that a sufficient number of customers are willing to pay for the higher quality. The Coca-Cola company, however, failed when they implemented this strategy, namely, when they launched the New Coke which the customers did not embrace, because the emotional commitment of consumers to the Coca-Cola brand was not taken into account. The company received numerous letters of protest, formal protests ensued and they were even threatened to be sued. The company soon withdrew the New Coke brand.

2. characteristics improvement – means adding new characteristics such as size, material, weight, additives... improvement of characteristics may not pay; one flaw of this strategy is that it can easily be copied.

3. style improvement – includes the improvement of aesthetic attractiveness; this strategy can ensure a unique identity (example of mineral water packagings). This strategy too, however, creates problems: people may not like the new style and the company risks losing the existing customers.

**C) MARKETING PROGRAMME MODIFICATION**

The company can take the following elements into consideration:

- Price – Should the price be raised/reduced? Should the price be reduced through special discounts, discounts on quantity, through reducing delivery costs, etc? Should the price be raised to stress the quality?

- Distribution – is there a likelihood of a higher degree of exposure of the product at sales points? Is there an opportunity to capture new distribution channels?

- Advertising – Should advertising costs be increased or should the text be changed? A combination of media?

- Sales improvement – Should the sales be stimulated by way of coupons, various discounts, guarantees, gifts? Sales improvement in this phase has more effects in comparison with advertising.

- Personal sales – should the number and quality of salespeople be increased? Should the grounds for salespeople specialization be changed?

- Service – Can the delivery time be shorter? Is there a possibility to offer the customers technical aid?

The company can extend the market when the essential values of the company are transferred to all the company’s activities. One example is the Delta company: Delta sport, Delta Maxi, Delta MC, Delta insurance.

**3.8.5. DECLINE**

This is the phase where the sales of the brand decline and it is necessary that a decision should be made whether to abandon or to revitalize it. The reasons for decline may be: changes in the customers’ taste, technological advances, fiercer domestic and foreign competition.
When sales and profits decline, some companies retreat from the market. Keeping a weak product can cost the company dearly; if weak brands are not eliminated immediately, an aggressive search for products that can replace them is only delayed. Some companies retreat from smaller market segments and weaker placement channels. There is, however, an alternative – to try to lengthen the brand life-cycle.

In the decline phase the company’s further strategy depends on the further steps competition will make. If the company’s rivals decide to leave the market, the sales and profit opportunities increase. On the other hand, if competition stays, the opportunities are limited. Companies can watch the intentions and activities of their rivals before they decide on the way to act. Five strategies are available in the decline phase:

- Retaining the brand without a significant reduction in the marketing costs, technological development and other investments, hoping that the competition will leave the industry branch. Many offices, for example, use typing machines instead of computers to fill in forms etc. If the company remains in business, and competition leaves, there is a possibility to earn income.

- Yield means a gradual reduction of brand or business costs, and simultaneously an attempt to sustain sales. The first step is to reduce research and development costs and investments into workshops and equipment. The company can also reduce the advertising costs, the size of sales force and the product quality. These costs should be reduced in such a way that customers, the competition and the employees are not aware of this, however, this is difficult. Many mature products require this strategy.

- Exit from the market – means abandoning the brand from the brand portfolio. As the remaining customers may still use the brand, this strategy should be implemented with care. There is a danger that abolishing the brand may affect other brands in the portfolio. In case the brand still has a good distribution and a certain reputation, the company will probably be in a position to sell it to another company.

- A selective reduction of the investment level of the company by abolishing non-profitable groups of customers, and simultaneously strengthening the company’s investments into profitable niches.

- Increasing the company’s investments in order that it should strengthen its competitive position and dominate the market. The company in an attractive industry branch should think of increasing its investments.

3.8.5. REVITALIZATION

In the brand revitalization phase the company’s marketing sector implements certain marketing mix tools in an attempt to bring the brand back to the previous position and start its growth again. This is most often a rather difficult and risky phase for the company since it involves a prior detailed analysis on whether the brand is “ready” at all and worthy of revitalization, or whether its decline and abolishment are imminent. In case there is an opportunity, the company management will undertake revitalization and implement a new method of brand promotion to try to recover the previous status and success of the brand so that it may result in sales increase and achieve economic results the brand had before the decline.

4. CONCLUSION

Brand is a modern dimension of the company’s strategy, be it a trading or a manufacturing company. As an element of the company’s product range, the brand becomes a modern marketing tool. The key role in the product range management belongs to the value and reputation of the product brand, however, also to that of the producer. In modern market conditions the choice of goods increasingly comes to the choice of the brand. The brand also gains in importance as a means of differentiation in relation to competition, that is, as the means for implementing the market positioning strategy.
This paper presents the analysis of theoretical and methodological elements of the branding process, with a focus upon product branding, via a presentation of possible brand development strategies as well as of the brand life cycle. Some characteristics of the branding process are illustrated by examples that served to analyse and compare some of the most important economic aspects of branding, such as the name, the quality and the price, and especially the brand success.

REFERENCES


Project Management College was established in 2007. It has significantly enhanced the education in the project management field and the development of the profession of the project manager. In 2007 this school was accredited and thus the Project Management College achieved a higher profile. Project Management College offers an accredited three-year bachelor programme and a one-year specialist programme.

**CURRICULUM – PROJECT MANAGEMENT**

**UNDERGRADUATE STUDIES**

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CURRICULUM – BUSINESS AND INNOVATION MANAGEMENT

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<td>English Language I</td>
<td>English Language II</td>
</tr>
<tr>
<td>III Semester</td>
<td>IV Semester</td>
</tr>
<tr>
<td>Production management</td>
<td>Innovation management</td>
</tr>
<tr>
<td>Strategic management</td>
<td>Technology management</td>
</tr>
<tr>
<td>Basis of organization</td>
<td>Marketing basis – Opt.</td>
</tr>
<tr>
<td>(Two subjects can be chosen)</td>
<td>(Two subjects can be chosen)</td>
</tr>
</tbody>
</table>

GRADUATE STUDIES

<table>
<thead>
<tr>
<th>I Semester</th>
<th>II Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern management</td>
<td>Total quality management – Opt.</td>
</tr>
<tr>
<td></td>
<td>Communication management – Opt.</td>
</tr>
<tr>
<td></td>
<td>(Two subjects can be chosen)</td>
</tr>
</tbody>
</table>
Serbian Project Management Association (YUPMA) was formed as YUDRUP in 1986. In 1997 it has become a full member of the International Project Management Association (IPMA). YUPMA and its members have so far taken part in a large number of national and international research and other projects in the field of management.

**CERTIFICATION**

YUPMA offers the international certification through the YUPMA CERT programme based on the IPMA® certification programme. The YUPMA CERT programme objective is to test and verify the competence of candidates in project management.

The YUPMA CERT programme has four levels of certification:

- **IPMA level A:** Certified Project Director®
- **IPMA level B:** Certified Senior Project Manager®
- **IPMA level C:** Certified Project Manager®
- **IPMA level D:** Certified Project Management Associate®

**SEMINARS**

YUPMA also organizes appropriate training in the field of project management via seminars, courses and lectures delivered by both our and foreign experts. Training courses are organized periodically or at the request of a company or another organization. YUPMA’s standard offer includes a number of seminars and courses which can be geared to the specific requirements of the participants. On completion of any seminar the participants receive a certificate.

Listed below are some seminars the Association organizes:

- Project management
- Training for project managers
- Project management in IT
- Managing the EU projects
- Business Plan Preparation
- Project Management in Specialized Fields (health-care, education, public administration,...),
- Project Management Software Packages (MS Project, Primavera)

**SYMPOSIUM**

One of YUPMA’s major tasks is the organization of symposia bringing together the experts engaged in project management and related disciplines. One of the major objectives of these scientific meetings is to describe the position and the development of project management in Serbia and in the region. So far, fifteen symposia on project management have been organized and they are traditionally held every spring on the Mount of Zlatibor.