

**SMEs' Management  
in the 21<sup>st</sup> Century  
– Challenges and Solutions –**

*Monograph*

**Editor:  
Csaba Bálint Illés**

**Częstochowa, 2012**

The publication of this book was supported by International Visegrad Fund and Agrár Management Alapítvány.



**Editor:**

Csaba Bálint ILLÉS, CSc

**Reviewers:**

Anna DUNAY, PhD

József LEHOTA, DSc

Iveta UBREŽIOVÁ, CSc

**Cover:**

OKTASZOL Plusz Bt.

ISBN 978-83-63500-16-0

ISSN 1428-1600

DOI: 10.18515/dBEM.M2012.n01

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Publishing Section of the Faculty of Management,  
Częstochowa University of Technology,  
42-200 Częstochowa, al. Armii Krajowej 36 B  
tel. (+48 34) 32 50 480, 32 50 859  
e-mail: wyd.wz@zim.pcz.czyst.pl  
Edition I; Publishing Layout B5. Circulation: 300 copies

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# FOREWORD

This book, “*SMEs’ Management in the 21st Century – Challenges and Solutions*” is designed to present the theoretical and empirical issues, methods and techniques which deals with the present situation, the running and development problems of Small and Medium Enterprises, and the use of these theories in practice is also introduced.

In today’s economy – not only in Europe but also all over the world – one of the key questions is how to maintain or develop the competitiveness of SMEs, which enterprises are able to adapt to the new and continuously changing micro and macro-environment, to find solutions for the challenges of sustainability and to continue their operations under the new circumstances.

For the successful performance of enterprises, it is inevitably important to manage, to lead and to improve them in a professional way. The book highlights both theoretical and practical issues of the development and operation of SMEs and makes a selection of possible solutions of their problems.

The main goal of this monograph to introduce the latest international research results of different management topics and to share the knowledge among professionals working both in academic field and in practice.

The book present the management issues of SMEs in four main topics, the development and strategy of enterprises, the specific management tools for SMEs, the management and training of human resources and the considerations in four chapters and the different business connections and cooperation which may improve the performance of the small and medium enterprises. These topics have outstanding interest in the Visegrad Countries, because in these countries private enterprises was destroyed after the World War II, and they could only be revitalized after the political and economic transition at the end of the 1980ies. Two decades after the political and economic transition, enterprises of this region shall face several problems arising from the lifecycle of enterprises. Their development process may hold many dangers and threats, deriving from either their own features or the changing environment.

Creating and planning business strategy makes a key problem for many small and medium enterprises, which may be a result of the lack of knowledge and/or their struggle for survival. Human resource is one of the most important factors of the development and the competitiveness of SMEs. Using the knowledge of human resource may bring new solutions, and may provide opportunities for development of enterprises. Therefore, human resource is one of the most valuable elements of an enterprise’s assets, and its improvement is a key factor of competitiveness. Education at different levels – further trainings, higher education, special training courses – gives the appropriate background for improving professional knowledge. Education is also an interesting field for bring together research, training and practice, in which SMEs may play an important role, either in cooperation with educational institutions or as objects of management research. The competitiveness of SMEs may also be improved by cooperation and good business connections, some good practices, and possibilities are described in the last chapter.

The readers – university students and professors, researchers, professionals and even managers – hopefully may find good examples, new ideas and methods from the results, case studies and experiences we presented in this book.

*Prof. Dr. Csaba Bálint ILLÉS, CSc  
Head of Institute of Business & Organizational Management  
Faculty of Economics and Social Sciences, Szent István University, Gödöllő, Hungary*



# **CHAPTER 1**

## **Business Development and Strategy**



*Csaba Székely*

## 1.1 DEVELOPMENT OF STRATEGIC THINKING

**Summary:** The classical management approach focused on the increase of productivity, which even at that time could not had been realized without setting objectives and elaborating plans. In Taylor's era, however, analyses were primarily focused on solving internal problems of the organizations; structure design, organization, performance evaluation and control had become the focus of attention. In general, short-term, operative goals had been set and the implementation of them had been tried to be achieved.

The term 'strategy' came much later into the focus of attention, only in the 1950s. After recognizing the importance of strategic planning, strategic management has become the most important concept and tool of the corporate governance under competitive conditions. The theory and methods of strategic management have been greatly evolved over the past decades and now strategic management can be considered as the starting point of several new disciplines. But the views on strategies have been also changed: new theories have been developed for the systematization and for their implementation.

The presentation discusses the main stages and approaches of the strategic thinking. It deals with the divergences and branching of the strategic management and the professional areas starting thereof. Finally, it attempts to form groups of the existing strategy development approaches.

**Keywords:** strategy, strategic management, competitive strategies, innovation, abduction

## 1. INTRODUCTION

The word strategy is of Greece origin; it is connected with strategics, but in the Ancient China Sun Tzu was also engaged in the art of military leadership<sup>1</sup>. Strategy uses military actions and operations to achieve victory. What Von Clausewitz<sup>2</sup> meant by strategy was 'using battles in order to win the war'; i.e. the goal was to reach a long-term success.

The term strategy was rooted in the field of economic sciences through the *game theory*, where 'planning of series of defined game-actions are meant by strategy, where each action is formed depending on the possible own actions and the expecting contra-actions' (Chandler, 1962). On the basis of this corporate economics took over the term strategy and it was used in the American universities at first (Chandler, 1962, Ansoff, 1965). The strategic approach has developed one of the most important management functions, the *planning*.

The main task of the corporate governance is to set up future plans and to make decisions in order to implement them. Conscious shaping of the future can be made through elaborating *plans* and implementing them. Analysing the development of planning approaches, Ackoff (1974) mentions three more basic approaches.

The *satisfactory planning approach* means the effort to achieve something better than the existing. At the beginning, only this approach could be successful, because satisfactory economic models and information processing technologies were unavailable. The *optimization approach* may have spread in the period after the Second World War, when

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<sup>1</sup> Sun Tzu: The Art of the War. Original: 500 B.C. Translated by S.B. Griffith. Oxford University Press, New York, 1963.

<sup>2</sup> Von Clausewitz, C.: On War (translated by M. Howard and P. Paret), Princeton University Press, 1976.

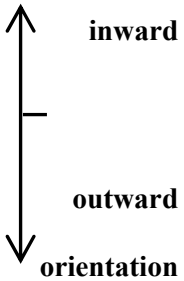
operation research models and methods for military purposes as well as computer technology became available also for civil users. Its characteristic is the effort to reach the possible best (e.g. fixing the maximum income) which can be realized most easily in static situations. Economic systems, however, can be described only with complex, dynamic models; therefore optimization has only limited possibilities in the planning. The other problem is the continuous changes, modifications in the economic environment that constantly creates new situations for the planning. As a result, the *adaptive approach* has developed, which means the answer to environmental challenges. Compared to the previous planning approaches it is a significant difference that the goal in the adaptive approach is not only one suitable *plan* but to create a *planning system* capable to response. As the environmental forces (e.g. weather, market price, legislation, etc.) cannot be influenced, the passive response was considered to be possible by the adaptive approach at first, but later the active response was also thought to be more and more possible (e.g. victory over the competitors, influence on politicians, etc.).

Ackoff's opinion is only one step away from the *strategic approach*: strategy is nothing more than adaptation taking into consideration the expecting actions of the competitors.

**2. DEVELOPMENT OF MANAGEMENT CONCEPTS**

On the basis of similar thoughts Ansoff (1965) worked out his system about the development of management concepts and on this basis he got to the emergence of the strategic management.

*Table 1: Development of management concepts by Ansoff*

Years	1900	1925	1950	1975	2000
<b>The future</b>	recognizable	extrapolable	Recognizable discontinuity		novel discontinuity
<b>State of the environment</b>	stable	reactive	anticipative		creative
<b>Management approaches</b>	Planning and control, extrapolation		Opportunities and risks, anticipation	Weak signals, flexible answers	surprises, evolution
<b>Management systems:</b> 	rules, prescriptions, plans financial control, budgeting, MbO		Long term planning Strategic planning Strategic management Strategic and Change management		

Source: Ansoff (1965), modified

The opinions about the predictability of the future and the understanding of the environment have significantly changed for the emergence of management sciences<sup>3</sup> and more and more new management concepts have arisen in the course of time. Table 1 shows the development of management concepts by Ansoff.

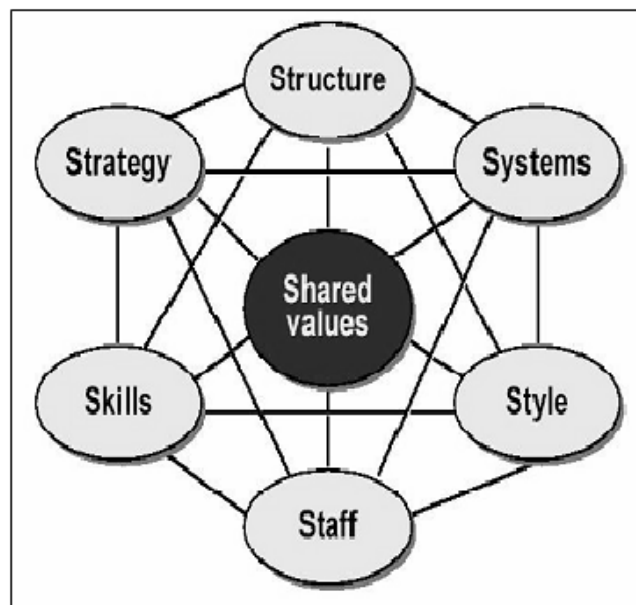
<sup>3</sup> A hundred years ago, in 1911 Taylor published his book *Scientific Management*, which is said to be the first summary work in management sciences.



As it is shown by Table 1, at the beginning the future was assumed to be recognizable, respectively it can be predicted on the basis of the past events. Then certain patterns were believed to be discovered in the events and recognizable discontinuity was mentioned. Later more and more new and unexpected changes were discovered in discontinuity, therefore it was stated that unprecedented events, changes also had an influence on the processes. Accordingly the condition of the environment was characterized with supposing stability first, then with predictable changes and finally with unpredictable turns. Accordingly, the management concepts have developed further from focusing on (short-term) planning and control to methods, concepts capable of responding to unexpected events. In addition the orientation of the management approach can also be observed: at first, the efforts of the management were directed inwards (inward the company) but later the attention was increasingly fixed on the external environment, respectively the competitors. In this complex development process first the long-term then the strategic planning has evolved, which finally led to the creation of the science of *strategic management* as a general leading concept and the *change management* capable to react to sudden changes, as well as *crisis management*.

Beside the views on the environment and the future, the management science has also changed a lot in the field of human relations and the dialogue with the society. According to Taylor (1911) the task of a manager was to organize work processes optimally and to increase productivity, but the *behaviourist school* has developed soon and it considered the utilization of human capabilities, the development of leadership skills and conflict solving to be the most important issues of organization science focusing on human relations. These views have spread in the same way in the field of the strategic management. At first, the classics of strategic management considered three issues to belong to the topics of the strategic management: evolving of *strategies, structures and systems*. But Waterman, Peters and Phillips (1988) mention seven factors as the criterion of a successful strategy in their 7S model<sup>4</sup>: over the previous three areas, the importance of *skills, style, staff* and *subordinate goals* is emphasized as well (see Fig. 1).

**Figure 1: 7S Model**



Source: Waterman, Peters and Phillips (1988)

Beside the *hard* elements of the strategic management, *soft* aspects (i.e. human aspects) have been put into the science of the strategic management.

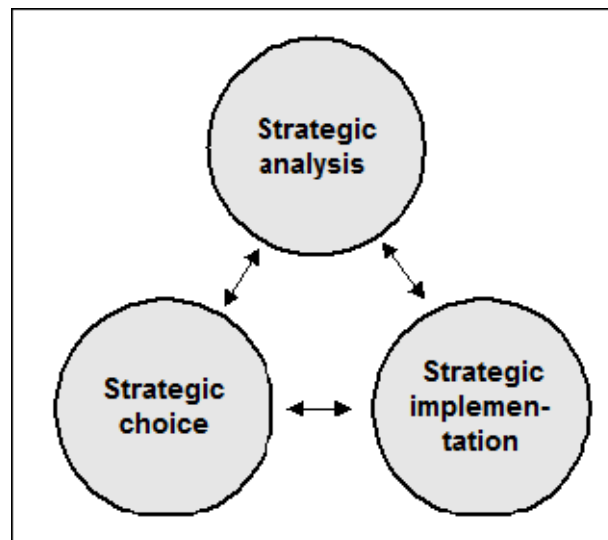
<sup>4</sup> Later this became known in literature as McKinsey 7S Framework.

The views on the society, more precisely the views in connection with the social responsibility of the companies have been significantly improved. In the 1920s Henry Ford said the following: ‘What is good for business is good for society. Service comes first, but it means increased productivity and profit.’ But in the 1960s Henry Ford II revised his predecessor’s concept: ‘Corporations should help solve major social problems, such as helping disadvantaged minorities and preventing environmental damage.’ In the 1980s, the Business Roundtable drew up the rule, which is still valid in our days: ‘The long-term viability of the corporation depends upon its responsibility to society’ (Montanari, 1990). Later this approach became general, it became business practice and even more some people forged business benefits by making corporate social responsibility (abbreviated as *CSR*) to be a marketing strategy.

### 3. BRANCHES OF STRATEGIC MANAGEMENT

At the beginning the process of strategic management was considered to be realized in the execution of three tasks (see Fig. 2.). The suitable strategy has to be chosen on the basis of a wide strategic analysis and one has to work on its implementation.

*Figure 2.: Three tasks of strategic management*



Source: Ansoff, 1965

Later the tasks were different and both on the company and business unit level the following steps were differentiated: the determination of vision, mission and objectives, inside and outside analysis, tests, the definition of the strategy, detailed elaboration of the strategy (strategic programming), realization of the annual planning and performing strategic management control (Hax and Majluf, 1991).

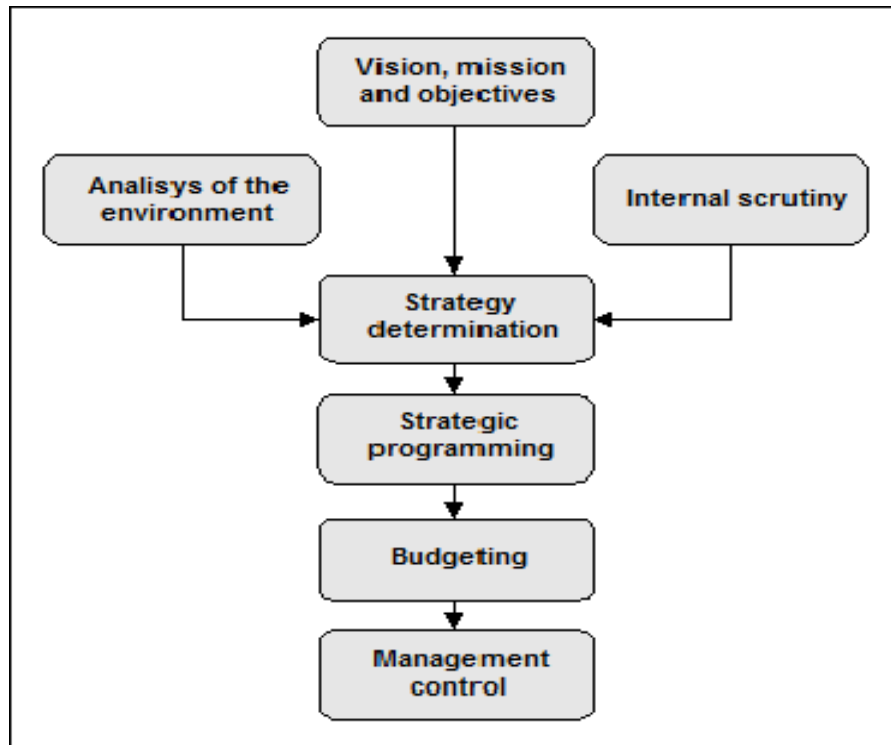
As it is shown in Figure 3, these steps are repeated again and again, because the strategic management can define the paths and tasks to be followed in the future on the basis of the existing experience and the reaction to the changes in the outside environment.

The progress of the elaboration and implementation of the strategy has enriched with new methods and approaches in the course of time. For example, the determination of the vision, mission and objectives is considered by Hungenberg (2008) to be not a strategic, but a *normative management* task, since the vision of big corporations are determined as a normative for the corporation by the owners outside. He thinks that the determination of corporate constitution and the influence on corporate culture also belong to the normative

management. The issue of the corporate social responsibility (CSR), which is also analysed as an independent topic, is part of this branch, as well.

Similarly to CSR, more and more independent branches have diverged from the strategic management which drew the attention of other scientific fields or inversely, the strategic management uses principles and methods developed by other sciences. Only some of the more important ones are mentioned in this study.

**Figure 3: Process and stages of strategic management**



Source: Hax and Majluf, 1991

As a result of the researches on *organizational culture*, the issues of corporate culture became part of the strategic management (Handy, 1985). *Scenario writing* (Schoemaker, 1995) and *benchmarking*, i.e. the method of comparison with the best practice are mentioned among the methods of environmental studies. Beside the methods based on SWOT-analysis, *creative techniques* (such as brainstorming, synectic, heuristic methods, error prevention analysis and so on) are more frequently used to elaborate the strategy. Performance objectives are appointed in the phase of strategic programming, where beside the financial goals other important strategic objectives are determined on the suggestions of the *Balanced Scorecard* (BSC). The BSC has become the tool of not only the appointment of objectives, but also the control of implementation (Kaplan and Norton, 1996). In connection with the changes of views on the predictability of changes in the environment (see Table 1), *change management* has developed, which is capable to give adequate answers in the organization to the unexpected and therefore usually unforeseen in strategic planning changes in the environment. The increase of the importance of *knowledge management* is also related to this, because the appropriate adaptation is impossible without the adequate knowledge in the rapidly changing environment. In an early phase of the development, *reengineering*, i.e. the total reorganization of the corporations also became an important field, however, due to its harsh methods (radical reorganization, termination of activity, dismissal etc.), its importance is less emphasized today and other methods (lean management, outsourcing, etc) have replaced it. As quality has become an important competitive factor, quality-oriented

organizational methods and strategies have also spread about and total quality management (TQM) has become the most famous one.

It is particularly worth to analyse the issues of strategic *management control*. The control was always considered to be one on the important basic functions of the management that is why it was integrated into the management system at the development of the strategic management. The most important role of the control is the comparison of the plans and the facts, which can be the base of the continuous correction of the strategies and the determination of the adequate answers to the changes in the environment.

Parallel with the development of the strategic management, another approach called *controlling* has been developing. Following Horváth's work (1979) a management system based on a 'plan and fact' comparison and focused on the last phase of the management process has been developed. Controlling practitioners recognized soon that plans, especially strategic plans are needed for the plan-fact comparison, thus a process determined by the strategic management concept was built upwards from below, too. Consequently, the strategic management and the controlling examine the same issue with partly different focuses and analysis methods.

#### 4. THE DEVELOPMENT OF STRATEGIC CLASSIFYING

In the relatively early phase of the development of the strategic planning, it was attempted to determine and classify the different strategic types. For example, according to the stages of the appearance, Mintzberg (1988) differentiated intended, deliberate, emerging and realized strategies. It was also typical in this period to differentiate according to the fields and functions (e. g. market strategies, production increasing strategies, R+D, marketing strategies, organizational development strategies, etc.).

The first methodisation whose base was the logic of the main elements of the strategy can be related to Ansoff (1965). Ansoff emphasized two dimensions: the dimensions of the product and the market, on the basis of the development dimensions of which he classified (existing or new products or markets). This is the basis of the Ansoff-matrix, which is illustrated by Figure 4.

*Figure 4.: The Ansoff matrix*

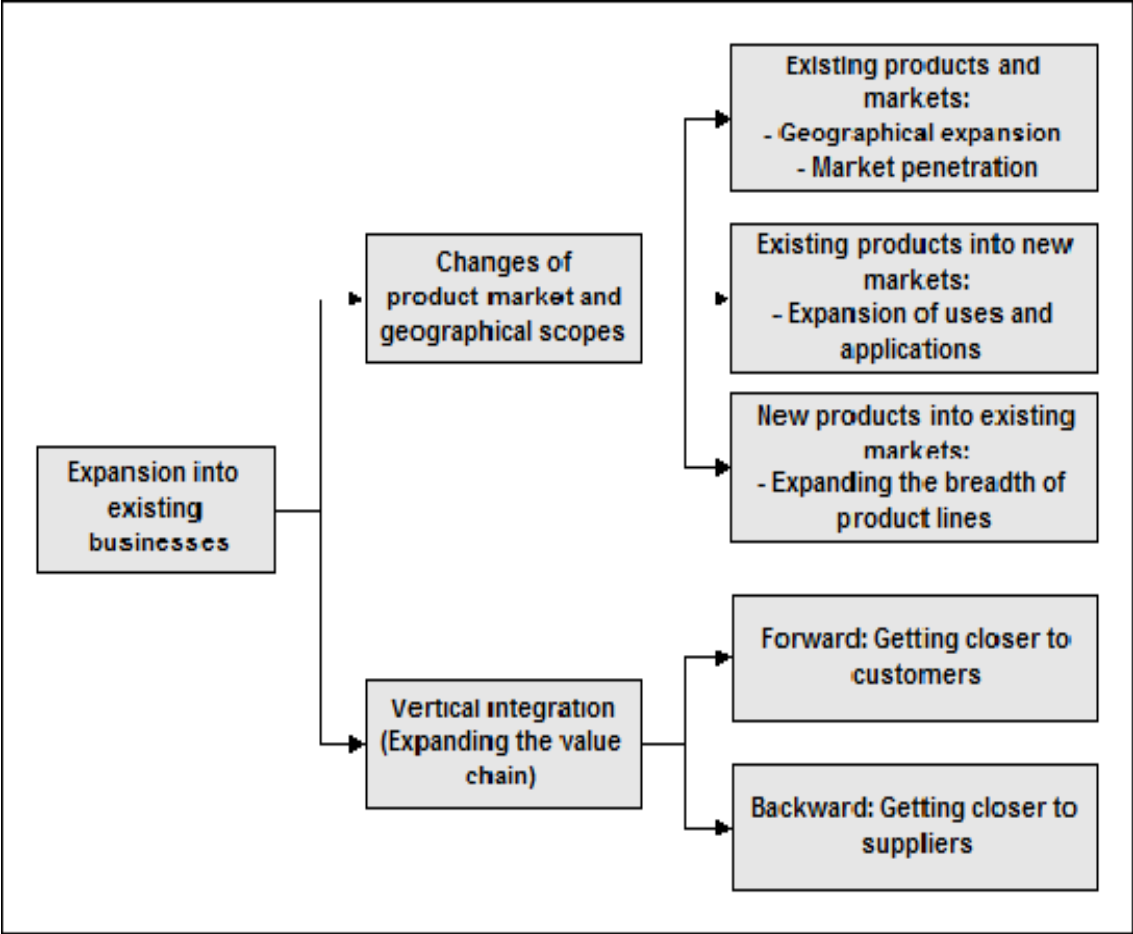
		PRODUCT	
		Present	New
MARKET	Present	Do nothing Withdraw Consolidate Market penetration	Product development
	New	Market development	Diversification (related, unrelated)

Source: Ansoff (1965)

In case of the existing products and markets Ansoff considers the strategies of market withdrawal, consolidation and a stronger market penetration to be possible beside the suggestion ‘do nothing’; while in the other cases he suggests paths of growth (market development, product development and diversification).

Almost the same possibilities are drawn up in the so-called expansion (growth) strategies, which also contain the approaches of the vertical integration. The common principal basis of the expansion strategies is that each corporation focuses on the increase of the corporate value, although this objective cannot always be realized, because of the limited resources and buyer’s markets. These alternatives are shown in Figure 5.

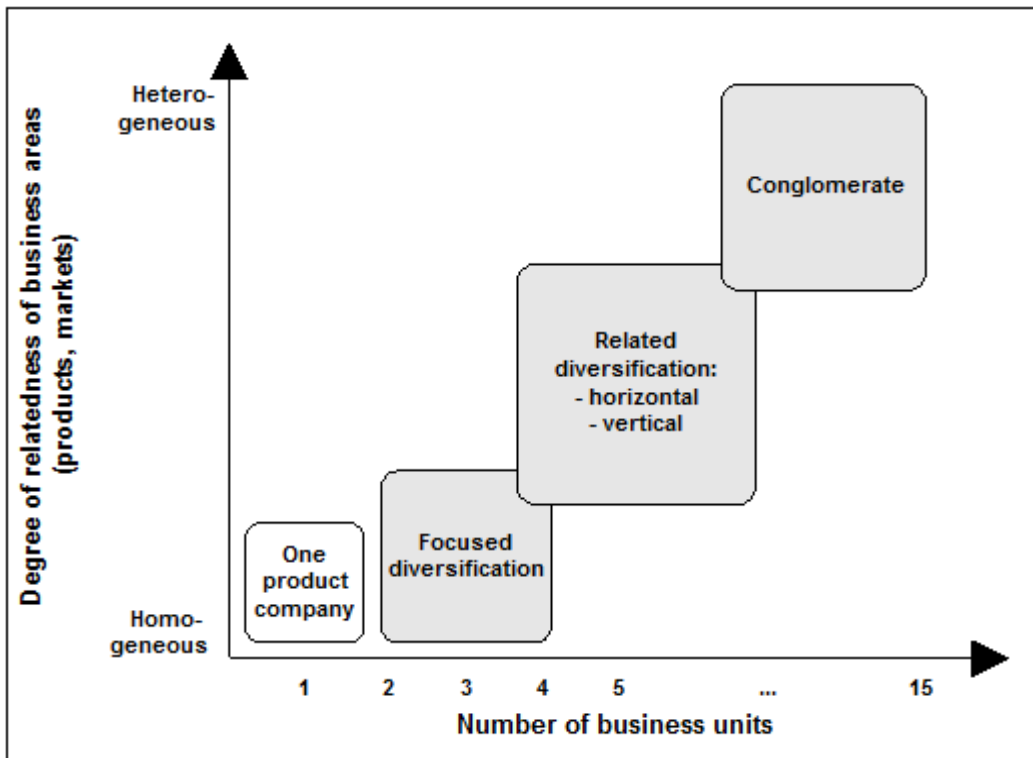
Figure 5: Alternatives for Growth



Source: Hax and Majluf (1991)

The path of growth can also be the diversification which is called the case of ‘new products, new markets’ by Ansoff. Diversification, however, can also be realized so that the company achieves larger sizes, increasing corporate value with the acquisition of existing products and markets. The following figure shows the diversification strategies according to the number of products (markets) and the level of relation (conformity) among the branches of strategy. Accordingly, Hungenberg distinguishes focused, horizontal and vertical diversification, resp. conglomerates (Figure 6.).

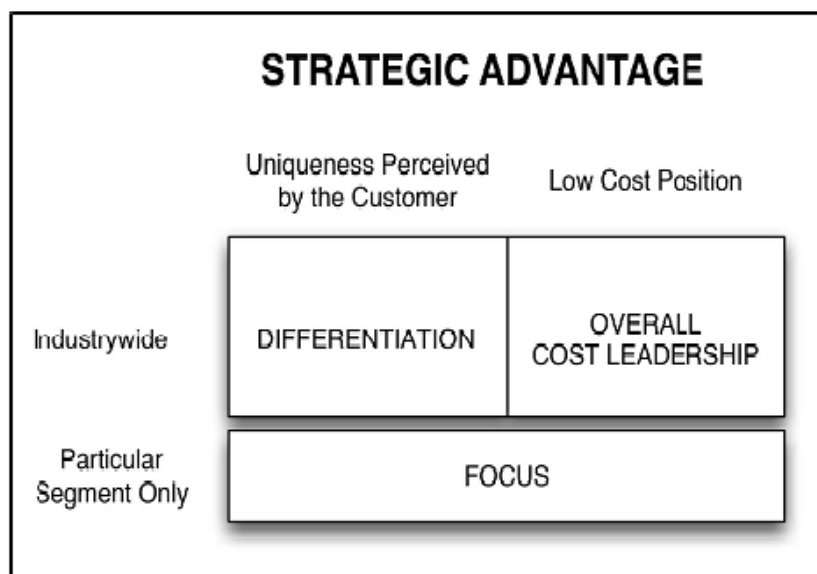
Figure 6: Diversification strategies



Source: Hugenberg (2008)

Taking into consideration the approach that the strategy is the means of corporate governance under competitive circumstances Porter (1989) suggests the methodisation on the basis of *competitive advantages*. At first, Porter thought that the lower price and so the lower expenses or the useful features of the products, i.e. the distinction could be the main competitive advantage and he determined the main (generic) strategies on the same basis (see Fig. 7.). Later he enlarged this approach with a new dimension, with the expansivity of the competition area, on the basis of which he distinguished wider, or focus strategies.

Figure 7.: Generic strategies

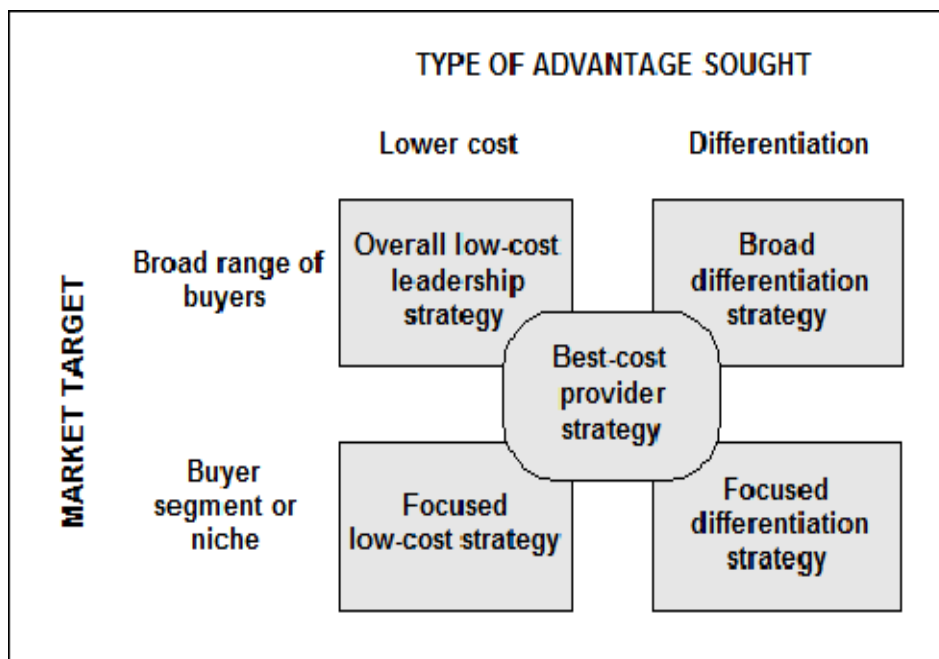


Source: Porter (1980)

In Porter's opinion, strategies are worth to be developed by these dimensions, as the combination of the generic strategies leads to less effective solutions.

Later this approach was disproved by the results of the corporate practice, which also led to success in case of the so-called 'hybrid' strategies. For example, SWATCH watches which was made on the image of the Swiss watch and was available at a relatively low price in the 1980s? It has been proved that it is also possible to gain advantages in this way and it is called the 'best cost provider strategy' and refers to a service or product of good quality at a reasonable price. In certain cases this advantage means that the buyer can save more money with the product than in other cases. Figure 8 shows the competitive strategies.

*Figure 8.: The competitive strategies*



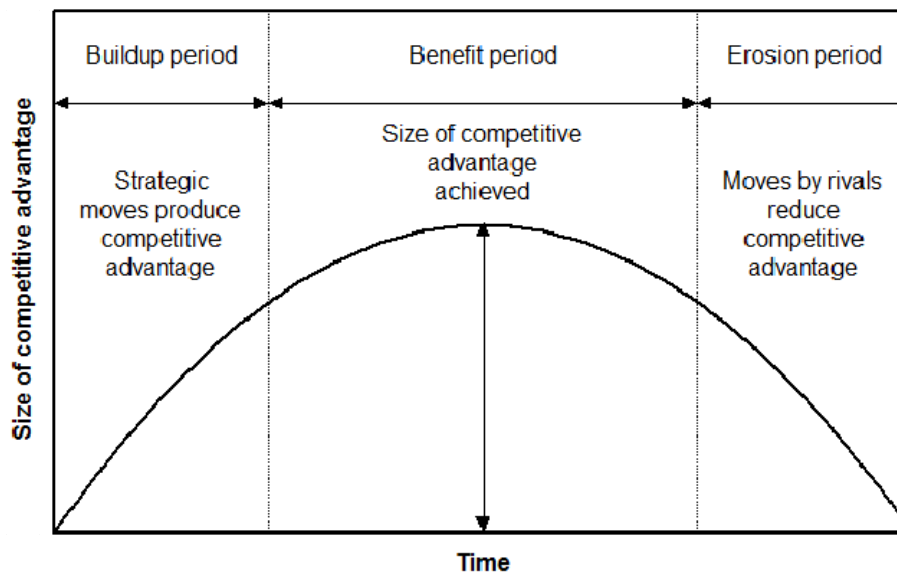
Source: Porter (1980), modified

Beside the winners, losers are also supposed by the competitive strategies and market participants actively attack or in certain cases they are compelled to be defensive. This fact has led to the distinction of offensive and defensive strategies. Military terminology is used to describe the offensive behaviour (overrun attack, wing attack, face-to-face fight, guerrilla operations etc.) just as in the case of defence (preventive attack, block behaviour, leaking out of threatening information etc.)

However, the classification according to the offensive and defensive strategies does not contradict the competitive strategic concept, but complements it. In case of any strategy, an introduction, a construction stage, a longer utilization stage and an erosive stage can be distinguished (Figure 9).

The construction stage can usually be characterized with offensive operations and the growth of competitive advantages. However, from the beginning of the utilization stage the attacks of competitors which can be more and more intensive have to be taken into consideration. In the erosive stage, the defence is typical as this time the competitors can significantly decrease the advantages with their attacks.

**Figure 9.: Building and Eroding of Competitive Advantage**



Source: Thompson, 1995

Kim and Mauborgne’s (2004) approach seems to contradict the principle of competitive strategies which has become known as ‘*blue ocean strategies*’. The authors indicate in the subtitle of their book: How can an undiscovered market place be created, making the competition unimportant?

The authors distinguish *red ocean* strategies, i.e. the traditional competitive strategic actions from the *blue ocean* strategies according to the features in Table 2. (The name of red ocean refers to the markets full of bloodthirsty sharks.)

**Table 2: The features of red ocean and blue ocean strategies**

<b>Red ocean strategies</b>	<b>Blue ocean strategies</b>
Competition among the existing markets	Exploring and creating new markets
Victory over the competitors with the existing competitive advantages	Avoiding the competitors
Increase of market share and optimal use of current demand	Creation of new demand
Cost leader or distinctive strategy	Combination of favourable costs and distinction

Source: Kim and Mauborgne, 2004

In fact, the idea seems really new, although, *pioneers* or those who first introduced innovative products into the market are much earlier mentioned in the literature of the strategic management. Pioneers can achieve significant time and price advantages than *followers* or copiers, but their risk can also be much higher. The authors of blue ocean strategy consider the creation of not only new, innovative products, but also the development of new markets to be an important task. In order to achieve long-term success the corporations following this strategy have to be leaders continuously, otherwise they can soon become victims of the attacking competitors.

Today the issue of innovation and innovative corporations is in the focus of attention and people expect the solution for the more and more depressing problems of humanity (energy shortage, climate change, world food problems, health issues, etc.) from this concept.



## 5. THE LEVELS OF STRATEGIC THINKING

If every company were able to acquire the ‘standard’ knowledge of strategy development and implementation uniformly and perfectly, competitive advantages couldn’t be achieved in this way theoretically and only a greater potential (resources, size etc.) would matter. It means that the strategic management as a corporate governance concept can only be successful if its applicators are able to develop further the concept itself, as well. Science also tries to keep up with this demand and works out newer and newer approaches in the field of the strategic management.

Continuous development could be already detected in the previous chapters, although in these cases it is rather a methodological development. But the elaboration of innovative strategies requires approaches and tools different than the previous ones which expands the earlier views on strategic management. Creativity and innovativity become an ability of special value, for the development of which the achievements of psychology, sociology, knowledge management and other sciences are also needed.

Table 3 shows the new strategic approaches according to the system of Baracskaï and Velencei (2011) that are characterized together with the traditional conception by three levels.

*Table 3.: Levels of strategic thinking*

<b>Level</b>	<b>Orientation</b>	<b>Features</b>	<b>Schools</b>	<b>Means</b>	<b>Consulting assignments</b>
<b>I.</b>	Data orientation	High-tech	Positioning school (Harvard)	Strategic management methods	Analysis and design services
<b>II.</b>	Innovation orientation	High-concept	Learning school	Strategic business models	Business partner
<b>III.</b>	Abductive orientation	High-touch	Art school	Strategic thinking	Strategic partner

Source: Baracskaï et al. (2011) modified

Level I, the classic version of the strategic management, means the basis for further development. Its followers professionally explore the company’s strengths and weaknesses with the help of the strategic analysis; they find the main driving forces and the basic competences on the basis of which they are able to elaborate the right strategies.

Level II can develop and implement fundamentally new solutions with the help of learning ability, association and innovation techniques.

Level III can be achieved by those who are able to acquire strategic knowledge at a high level and also gain a remarkable practice in this field and thus they become the ‘artists’ of strategy. The name of abductive orientation means that on the basis of their knowledge and experience the creators of the strategy come to the correct conclusions obviously and almost from their conviction<sup>5</sup>.

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<sup>5</sup> *Abduction*: discovery of explanatory hypothesis; the creative mind is able to come to the correct conclusion ignoring the rules of formal logic. In addition to induction and deduction this is a third problem-solving mode.

## 6. CONCLUSIONS

*As a summary* it can be stated that none of these approaches can lead to the right strategic solutions alone, with absolute certainty: the first level of strategic thinking makes it possible to learn the essential tricks of trade, and the second and third level can be suitable for achieving long-term competitive advantages surpassing the competitors. But these approaches do not offer guarantee against mistakes, failure or collapse. Therefore in order to elaborate the right strategy we need continuous, well-organized work and a professional staff whose members are excellent experts in their field and are well-motivated to increase the corporate value. The same applies to the implementation of the strategy that cannot be successful without the managers' high-level education and commitment. Furthermore it can be supposed on the basis of the development of strategic thinking that further management trends, approaches will emerge that can offer more and more mature and stable theoretical base and practical basis, as well for the successful governance of economic organizations.

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*Csaba Bálint Illés, Anna Dunay, Emese Tatár*

## 1.2 LIFECYCLE ANALYSIS AT SMALL AND MEDIUM ENTERPRISES – THEORY AND PRACTICE

**Summary:** Continuous – and sometimes very quick – changes mean an important challenge of our time. Because of these changes, the importance of the assessment of macro environment and the operating activities of enterprises has increased significantly in the past few years. In order to show an economic growth, companies shall pay attention for these changes at different levels – national, regional or global level – and they shall adjust their economic activities to changed circumstances. Small and medium enterprises (SMEs) are more sensitive in this case.

The directions of the economic growth path of enterprises are determined by several factors, for example by the internal conditions of the given company, which may shape the development processes of the company's life. In our research, we used the corporate lifecycle model of Adizes as an analytical method, which was supplemented by corporate medical records, as a useful practical tool. By these medical records, SMEs may easily explore their lifecycle stages, their main features, and the signs of evolution or revolution. These analyses may help in the decision process and may form successful change management tools in establishing new strategy if needed.

**Keywords:** corporate lifecycle, lifecycle models, small and medium enterprises, strategy, change

### 1. INTRODUCTION

The main purpose of the literary review is to collect and analyse the most important literature sources connected to this topic, and to determine the theoretical background of our researches. Growth is considered as a key issue in all types of enterprises at each growth stage and it has specific interest and also induces specific challenges in case of SMEs all over the world (Scott and Bruce, 1987; Nieman and Pretorius, 2004). However, it is more essential for the Central Eastern European member states of the EU, where SMEs are a key source of job opportunities and important field of innovative thinking (Ubreziová and Wach, 2010). It is also recognized that growth may bring not only new challenges, but quite often it may cause non-predicted, sudden crises. Demand of companies for economic growth possess the ability to build an adaptive organization (Watson and Everett, 1993; Osborne, 1995; Kuratko and Welsch, 2004) that would improve the capacity to take the required investment and strategic decisions (Nieman and Pretorius, 2004; Hisrich and Peters, 2002). Under present circumstances – i.e. in time of economic crisis – it is very complicated to follow the path of economic growth; therefore, it is a key objective to find those factors and tools, which may help to recognize the different stages of the corporate life. One of the most difficult decisions of enterprises is to modify their strategic plans adjusted to the changes of circumstances. According the opinion of Daróczy (2004) project planning is one of the most successful tool for this problem.

The main purpose of our research was to explore the differences between the different life cycle theories, their positive and negative features and to find an easy-to-use tool for companies to determine their present stage of their life cycle and the most important features of their possible growth path. We should underline, that economic growth is not the only, but one of the most important strategic objectives for enterprises, and its importance became more significant in the years of crises.

## 2. LIFECYCLE MODELS

Lifecycle models describe the different stages of corporate life. Every company is grown and developed according to a natural lifecycle, facing predictable problems at each stage along their way. All organizations, like all living organisms, have a lifecycle and undergo predictable and repetitive behaviour patterns as they grow and develop. At each new stage of development, an organization is faced with different challenges. How well or poorly can the management answer these challenges, it establishes their future, the success or failure of the organization. (Adizes, 1992)

The life of organizations show a cyclic process, as Szirmai (2002) emphasised; the life of a company or organization is a set of new challenges, which may be solved successfully or unsuccessfully. These answers will determine the growth path of the companies. Life of the enterprises may be considered as a process, a cycle or set of cycles. According to Jávora (1993) it is better to consider lifecycles, because the companies' life is not a permanent developing process but rather a cycle, where the periods of stagnation, increase and decrease change periodically. In our opinion, this aspect is closer to the reality, so we used this theory in our research work. These models may undisputedly help to define the exact place of the enterprises in the lifecycle phases; moreover, these lifecycle models show the different problems of the different stages, which may give practical help to the enterprises by presenting a so-called corporate medical record for the company executives. Chandler (1962) developed one of the early life cycle models of companies. This early work on corporate lifecycles made a base for subsequent researches on linkages between the company's lifecycle and their impacts on strategy, human resources management, operational practices etc. The core of most lifecycle models is that companies have to face different issues during the different stages of their lifecycle. With few exceptions, for example Adizes (1979) organizational lifecycle models do not include the phase of organizational decline and death.

In Table 1 and 2 we summarized and compared selected lifecycle models in order to show their similarities and differences.

**Table 1: Comparison of different lifecycle models in the view of corporate growth (1)**

Stages	Model of Adizes	Model of Timmons	Model of Hisrich and Peters	Model of Greiner
<b>Stages of growth</b>	1. Courtship 2. Infancy 3. Go-go	1. Pre-start up (incubation stage) 2. Start up and survival 3. Early growth	→ similarities with Timmons model, but more details in incubation stage	1. Creativity 2. Direction
<b>Rebirth and maturity</b>	4. Adolescence 5. Prime	4. Maturity 5. Stability-Harvest	→ similarities with Timmons model	3. Delegation 4. Coordination 5. Collaboration
<b>Decline</b>	6. Stable 7. Aristocracy 8. Early bureaucracy 9. Bureaucracy 10. Death	--	--	--

Source: own construction based on Zsupanekné (2011)

Lifecycle models show the life stages of the enterprises and organizations as a sequence of different stages, which are absolutely based on each other. These models not only determine the general features of the different stages, but the different operational and managing problems of each stage and the methods that may help the enterprises to handle the transition

periods more easily are also taken into consideration by them. The examined models show many differences in their stages, namely in their main features, their number and their details.

The model of Adizes introduces the different stages of the lifecycle compared to the human life stages. The model's most important feature is that it gives the most serious problems and threats, which may endanger the enterprise of that age. The Adizes model emphasizes that company leaders shall be able to recognize the difference between the conventional problems of a given life cycle phase of the organisation and those unconventional and harmful problems which may lead to a crises or the total fall of the company. According to Adizes, conventional problems may be solved by the internal resources of the organization if these problems may be foreseen, while the solution of unconventional problems or dysfunctions need an external help in every cases. Without this extra help, the organizations may face with irreversible situation. The special character of the model of Adizes is that it also refers to the possible death of the enterprises.

The model of Timmons does not follow the classic life stages and does not give too much details of the lifecycle, his model does not deal with the declining stage or the death of the enterprises. (Timmons, 1990) In the Timmons model not only the different stages of life of the company are introduced, but it also refers to the given year of the company's operation. Hisrich and Peters use the same characteristics as the Timmons-model, but they supplemented the pre-start up stage (i.e. incubation period) with more details. (Hisrich, 1991)

In Greiner's model, there are different stages (like in the Adizes model) but it deals with only the company's growth and omits the declining or death stages. (Greiner, 1998) Greiner posited a largely internal model, in which a growing organization moves through five distinguishable phases: creativity, direction, delegation, coordination, and collaboration. "Each phase is both an effect of the previous phase and the cause for the next phase" (Greiner, 1972, p. 41). Greiner's position was that "the future of an organization may be less determined by outside forces than it is by the organization history" (Greiner, 1972, p. 38). In Greiner's model, corporate lifecycle is depending on the age and the size of companies.

Salamonné (2006) in her study highlighted the correlations between the main features of different size and development phases of companies. Greiner's model puts emphasis on development stages of the organizations and the levels of the used organizational and management tools and systems, while the model of Adizes deals with the governance aspects and the flexibility criteria, which makes useful supplementary information about the organization.

**Table 2: Comparison of different lifecycle models in the view of corporate growth (2)**

<b>Stages</b>	<b>Model of Jávör</b>	<b>Model of Kocziszky</b>	<b>Model of Szerb</b>	<b>Model of Salamonné</b>
<b>Stages of growth</b>	1. Preparations 2. Formation 3. Obtaining the market	1. Foundation 2. Growing stage	Synthesized models	
<b>Rebirth and maturity</b>	4. Slow growth 5. Preparations for breakaway 6. Accumulation 7. Signs of crisis 8. Consolidation 9. Diversification in profession 10. Diversification of capital 11. Formation of organisational network 12. Formation of political relations or network	3. Differentiation 4. Consolidation	--	--
<b>Decline</b>	--	--	--	--

Source: own construction based on Zsupanekné (2011)

In Table 2, we summarized some applied models of Hungarian authors. The model of Jávör analyses the lifecycle in a very detailed way. The main concept of this model is to determine the as much stages as possible, and to pay attention for the different organizational problems of the different phases, and refers to the different signs of possible crises, which may endanger the growing process of the enterprises. Kocziszky (1994), in his model, call attention to that the length of each stages are influenced both by internal factors – decisions of the managers and owners – and external factors – e.g. macro environment of the companies.

Vecsenyi (2005) introduced another model type, in which he has differentiated four types of enterprises like the animals in a jungle, where gazelles are fast growing SMEs, ants are traditional SMEs, tigers are dynamic, large enterprises and dinosaurs are traditional large enterprises. His model is rather a static one and not a “classic” lifecycle model, but it introduces the development process of companies and there are several analogies between its types and the different stages of the classic growth models (Miskolczi, 2012). Ants, i.e. the small enterprises may be compared to the Creativity phase of the Greiner model, or the Infancy or Go-go stage of Adizes’ model, but these enterprises do not want to grow. Gazelles are similar to companies leaving the Creativity stage and attending Direction stage according to Greiner’s model, while they are in the Adolescence phase of the Adizes model. Gazelles want to grow in a very dynamic way. Tigers are at the top of their growth; this phase is the Prime stage is the Adizes model. Dinosaurs are a very special group of enterprises, which can be found mainly in the Central Eastern European countries. Dinosaurs do not grow anymore; they are usually in the Bureaucracy stage of the Adizes model. Of course, many other authors have dealt with the analysis of corporate lifecycles, but in accordance with the extent and objectives of our research, these models may be considered as sufficient.

### **3. “CORPORATE MEDICAL RECORDS” AS A MANAGEMENT TOOL**

#### **3.1. MEDICAL RECORDS – A GENERAL INTRODUCTION**

Medical record is used to describe the systematic documentation of the patients’ medical history and care while staying in the hospital. The very first of the present type of medical record was introduced in the United States, in the beginning of the 20<sup>th</sup> century at the Mayo Clinic. Medical record has been in use since ancient times, but their format was rather diary-like, showing the data and facts in time-series format.

The format of the medical record is determined by unwritten rules, some of them are general, or generally used in medical professions, other rules are more specialized in accordance with the local traditions of different hospitals or departments. A patient's individual medical record identifies the patient and contains information regarding the patient's case history. The medical record in every case should include the following data:

- the patient’s personal data,
- the patient’s case history,
- the patient’s status according to his/her physical examination,
- the patient’s medical history in chronological order since birth,
- the results of all examinations taken,
- epicrisis, i.e. the summary of the patient’s full case history.

The main objective of our research was to show how to apply the theoretical aspects of Adizes lifecycle model in practice. Therefore, we prepared the corporate medical record of a Hungarian construction enterprise for its different lifecycle stages, in which the most important characteristics and symptoms of the different stages were shown.

As it is well known, all living organisms have lifecycles, their main characteristics, life processes and behaviours may change with time. These features may be predicted, thus, the possible problems and threats may be treated or – in case of business organizations – managed.

During the long history of medical science, several diagnostic methods and therapies were developed for the treatment of living organisms, this processes may be adapted for other organizations. If the organization’s lifecycles and the characteristics of the different stages periodic and/or can be predicted, the management will know what is the present stage of life of the enterprise, thus they can react precisely and make the needed actions for avoiding the problems and the possible threats. According to Storey and Westhead (1994) the knowledge of corporate lifecycle models is not enough, they are sceptic about the practical usefulness of these theoretical models. In our researches, we observed that the entrepreneurs and company leaders need such practical tools, which are easy-to-use, which may be learned in an autodidactic way, without taking part at any courses or reading manuals. According to the Adizes lifecycle model, each stage has the specific features and preferences for behaviour, resource allocation and leadership motives. The specific motives are necessary and inevitable in the given stage, but they may refer to abnormal function in another stage.

In our paper, we wish to show one possible tool, the so-called “medical records”, introducing the different stages and the connected “corporate medical records” of a construction company according to the Adizes model. The general form of a corporate medical record is shown in Table 3.

**Table 3: Structure of a “Corporate Medical Record”**

<b>NAME:</b>	<b>Name of the company</b>	
<b>AGE:</b>	<b>Name of the stage</b>	
<u>Personal data:</u> The usual attributes of the different stages	<u>Symptoms, complaints:</u> Revolution symptoms	
<u>Immune system:</u> Dominant evolution characters	<u>Missing symptoms:</u> Symptoms which appears in Adizes model, but not typical in the examined company’s life	
<u>Temperature:</u> Symbolical indication to the general status of the company	<u>Therapy:</u> Suggestion how to solve the problems	

Source: own survey

### 3.2. USE OF ADIZES’ CORPOTATE LIFECYCLE MODEL IN PRACTICE

In the first stage of corporate lifecycles – the zero, or “courtship” stage – the organisation has not been born yet; it is only an idea in the further founders’ mind. The general characters of this stage are summarized in Table 4.

**Table 4: Structure of the corporate medical record in “Courtship” stage**

<b>Name:</b>	<b>Age: Courtship</b>	
<u>Personal data:</u> - ideas and concepts - opportunities - commitment	<u>Symptoms, complaints:</u> - excessive risk-taking - lack of commitment - founder’s low motivation	
<u>Immune system:</u> - willingness to risk-taking	<u>Missing symptoms:</u> -----	
<u>Temperature:</u> - high (resulted by high commitment level)	<u>Therapy:</u> - balance between commitment level and risk-taking level - the founder shall lead and manage the organization - commitments for producing added values	

Source: own survey



Courtship stage of the examined company has started as a forced path: at the beginning of the 1990s – resulted by the political and economic transition – the former state-owned company should be privatised. Six former colleagues, who had enough experiences and commitments for the future work founded a new company to follow the work. The specific features of the examined company are shown in the medical record of Fig. 1.

Figure 1: “Courtship” stage of the examined company

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Courtship (initial year – year zero)	
<b>EVOLUTION</b>	<u>Personal data:</u> - high commitment of the six founders of the company	<u>Symptoms, complaints:</u> -----	<b>REVOLUTION</b>
	<u>Immune system:</u> - willingness towards risk management	<u>Missing symptoms:</u> -----	
	<u>Temperature:</u> - high fever (commitment)	<u>Therapy:</u> - additional risk-taking - company foundation	

Source: own survey

The risk-taking level of the founders was equal and adequate for starting a new business, therefore the company was born and entered into the infancy stage. The general information about the infancy stage of the Adizes model is shown in Table 5.

Table 5: Structure of the corporate medical record in “Infancy” stage

Name:	Age: Infancy
<u>Personal data:</u> - commitment level - no hierarchy - no system working - one-person management	<u>Symptoms, complaints:</u> - lack of capital - haughtiness - lack of supports - problems of delegation
<u>Immune system:</u> - results - sufficient financial coverage	<u>Missing symptoms:</u> -----
<u>Temperature:</u> - commitment level - active operations	<u>Therapy:</u> - stable financing - stability on production and services - stability of suppliers - founder is released from pressure

Source: own survey

The founders were owners and managers in one person; they were very dynamic in their work, because of their former experiences and working morale as well as their very good connections. The only problem was the lack of capital, so almost all the expenditures were financed by credits. Lack of working capital was permanent and the strategic thinking was not typical in the company at that time. The medical record of this stage is illustrated by Fig. 2.

**Figure 2: "Infancy" stage of the examined company**

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Infancy (1993)	
<b>EVOLUTION</b>	<u>Personal data:</u> - staff: 6+25 persons - commitment, enthusiasm	<u>Symptoms, complaints:</u> - "lack of breast milk"– lack of capital - crisis management - lack of strategic thinking	<b>REVOLUTION</b>
	<u>Immune system:</u> - quick decision-making - parental love, commitment - solving the problem of the lack of working capital	<u>Missing symptoms:</u> - infant mortality (founders did not become numb)	
	<u>Temperature:</u> - high fever (commitment, enthusiasm)	<u>Therapy:</u> - stabilization of the financial background - stabilization of activities - building up suppliers' circle	

Source: own survey

Hard work, consciousness and the cooperation with Hungarian banks resulted the financial stabilization of the company, thus it could step further into the go-go stage in 1994. Table 6 summarizes the general features of Go-go stage.

**Table 6: Structure of the corporate medical record in "Go-go" stage**

Name:	Age: Go-go
<u>Personal data:</u> - realizing the opportunities - delegating authorities - many priorities	<u>Symptoms, complaints:</u> - overconfidence - crisis induced by the management - incoherence in management - decentralization - founders' trap
<u>Immune system:</u> - stable financial background - well-operating organization - good market recognition	<u>Missing symptoms:</u> -----
<u>Temperature:</u> - high	<u>Therapy:</u> - determined growth - formulation of operation networks - planning - professionalism

Source: own survey

It happened many times in the company, that the founders offered their own properties as a bank guarantee, because the company's revenues and/or assets has already been obligated for other financial services. A well-based consumer circle – in its general meaning – could not develop, but it is typical in the construction industry. During this stage (in 1994), bank financing was permanent, the company's situation was well developed and stable in the market. The founders of the company determined the different responsibilities and tasks according to persons instead of functions. The strength of the linear organizational structure is clearness, but it easily may result the lack of specialization. The circle of suppliers became stable. The company's main features are shown by the medical record of Figure 3.

Figure 3: “Go-go” stage of the examined company

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Go-go (1994)	
<b>EVOLUTION</b>	<u>Personal data:</u> - linear organizational structure - positioning on real needs - 24 hours stand-by mode of operation	<u>Symptoms, complaints:</u> - founders’ trap - crisis management - lack of strategic thinking	<b>REVOLUTION</b>
	<u>Immune system:</u> - stable financial background - good reputation - solving the problem of the lack of working capital	<u>Missing symptoms:</u> - many mistakes	
	<u>Temperature:</u> - high fever (commitment)	<u>Therapy:</u> - more efficient management style - improving professionalism	

Source: own survey

Although the results of the company were realizable, the management wanted to be more efficient and professional. These efforts have led to a new direction: the company has been transformed into a new organizational form, and started to operate as a holding. By this transformation they turned into a new stage of their lifecycle – the Adolescence stage. This phase of the corporate lifecycle actually means a rebirth. The organization is reborn independently of its founder; therefore, the main features of this stage are conflicts and incoherence. General features of the adolescence stage are summarized in Table 7.

Table 7: Structure of the corporate medical record in “Adolescence” stage

Name:	Age: Adolescence
<u>Personal data:</u> - incoherence - specialization - additional delegating of authorities - new management - expansion	<u>Symptoms, complaints:</u> - leaving colleagues - conflicts - increased importance of administrative tasks - lack of entrepreneurial spirit - decreasing confidence
<u>Immune system:</u> - organizational development - internal fights - incoherence	<u>Missing symptoms:</u> -----
<u>Temperature:</u> - high	<u>Therapy:</u> - balance of administrative management and organizational integration - creativity

Source: own survey

In order to increase revenues and to operate more efficiently, the owners created a holding to be more competitive in the construction industry. The works were distributed into separate divisions, but the management tasks were taken by the central body. The organizational structure was changed: it was transformed into a linear-functional structure. The suppliers and the consumers were satisfied. The investment projects needed increased amounts of cash; therefore, cash management was a general problem for the company, which could be solved by proper cash-flow planning and well-developed management of financial assets. Although the decisions were taken by the chief executive, the colleagues were satisfied and conflicts did

not appeared. Division of labour as well as decision-making tasks and responsibility was also determined according to the different functions. Fig. 4 shows the specific features of Adolescence stage of the examined company.

Figure 4: “Adolescence” stage of the examined company

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Adolescence (1995-1996)	
<b>EVOLUTION</b>	<u>Personal data:</u> - formation of a holding - linear-functional organizational structure - vertical expansion	<u>Symptoms, complaints:</u> - problems of capital distribution - centralized decisions	<b>REVOLUTION</b>
	<u>Immune system:</u> - increased productivity - rapid growth of revenues	<u>Missing symptoms:</u> - conflicts - personal changes in the management - decrease of sales	
	<u>Temperature:</u> - high fever (many orders)	<u>Therapy:</u> - new organizational structure - delegation of authorities	

Source: own survey

According to Adizes (1992), Prime stage is the most successful and favourable phase of the corporate lifecycle, when an organization is in its equilibrium position both in self-control and flexibility. In prime stage, organizational vitality is at its maximum. (see Table 8.).

Table 8: Structure of the corporate medical record in “Prime” stage

Name:		Age: Prime	
<u>Personal data:</u> - organizational structure - functional systems - successful performance - planning - growing business - separation of new organizations (at infancy stage) from the enterprise	<u>Symptoms, complaints:</u> - lack of well-trained professionals - internal conflicts - self-complacency		
<u>Immune system:</u> - permanent growing - excellent performance	<u>Missing symptoms:</u> -----		
<u>Temperature:</u> - dynamic operation	<u>Therapy:</u> - rules and for encouraging activities - decentralization - encouraging entrepreneurship		

Source: own survey

The examined construction company spent the longest period of its life in the Prime stage. An incentive system was introduced, quality management certificates were obtained during this stage, As a result of the professional knowledge, experiences and motivation of the leaders, the company could successfully react the changes of the market, thus both their revenue and market share increased. The power and responsibility became well balanced and the organizational structure was corrected. The number of employees increased to 300 persons, which was essential for the realization of the investments projects they applied successfully in those times. The lack of capital has not occurred, as the company had good connections and working relationship with different banks. The company had got ISO 9001

and ISO 9002 certificates, which certifies the permanent good quality of work and technology and, in addition, it could improve the competitiveness of the company. The internal decisions also stimulated the growing process. An incentive system was introduced for the project managers. The leadership style was conscious; the brainstorming and ad-hoc decisions were not typical. The company could expand in the construction sector. The medical record of this stage is shown by Fig. 5.

Figure 5: “Prime” stage of the examined company

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Prime (1997-2003)	
<b>EVOLUTION</b>	<u>Personal data:</u> - equilibrium status (control: flexibility) - successful performance - growing business - increasing revenues	<u>Symptoms, complaints:</u> - problems in distribution of available capital - centralized decision-making - 2004: market saturation	<b>REVOLUTION</b>
	<u>Immune system:</u> - permanent growth (market expansion) - incentives system for project managers - introduction of quality assurance systems (ISO 9001, ISO 9002)	<u>Missing symptoms:</u> - separation of new from the enterprise - no complaints on the lack of cash (resulted by the high activity of the company)	
	<u>Temperature:</u> - mild fever/fever (“golden age”)	<u>Therapy:</u> - coordination of works undertaken, current assets and suppliers - conservation, staying in the same stage	

Source: own survey

In 2004, the supports of the housing programmes was cut by a governmental decision, which caused a turning point of the company’s growth, as it caused a significant decrease of the company’s revenues. As a result of this breakpoint, new objectives and new strategy had to be determined to survive the oversupply in the housing market. The most important challenge of this stage was to stay in this stage as long as possible and to maintain the stability of the organization. Nevertheless, the rate of growth has decreased, and the company made a step into the next phase, to the Stable stage in 2004.

Stable stage is positioned at the top of the lifecycle curve, but it is not the place to be, as companies that are in the Stable phase have started to lose their vitality and are aging.

Table 9: Structure of the corporate medical record in “Stable” stage

Name:	Age: Stable
<u>Personal data:</u> - intention for positive economic results - well-organized operations - sense of safety - conservative operating methods	<u>Symptoms, complaints:</u> - decrease of growing process - focusing on former success and results - uncertainty with changes - strict instructions
<u>Immune system:</u> - obtaining new markets - less risks	<u>Missing symptoms:</u> -----
<u>Temperature:</u> - normal	<u>Therapy:</u> - obtaining new markets - satisfying consumers’ needs - creativity - entrepreneurial spirit

Source: own survey

The Stable stage is summarized in general by Table 9, while the specific features of the examined company are shown by Fig.6. One of the most important barriers of a company’s growth is the market saturation and the decreased demand. It leads to the loss of revenues, which may cause redundancies in order to decrease costs. The management should adjust their strategy and to find market niches. This intention was successful and the company could take part in very dynamic new projects: the construction of water theme parks. They could not make greater changes in the strategy, for example, they did not want to obtain foreign markets. It predicted the vision of slow decline, which could not be stopped, thus the company entered into the aristocracy stage.

Figure 6: “Stable” stage of the examined company

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Stable (2004-2006)	
<b>EVOLUTION</b>	<u>Personal data:</u> - sense of safety - number of employees reduced to 240 - adequate ratio of customers and suppliers	<u>Symptoms, complaints:</u> - decline in revenues (reduced demand, market saturation in the construction industry)	<b>REVOLUTION</b>
	<u>Immune system:</u> - new market niche (water theme parks)	<u>Missing symptoms:</u> - unwillingness to open new markets	
	<u>Temperature:</u> - normal	<u>Therapy:</u> - instead of self-preservation, to find and to open new markets is suggested	

Source: own survey

In Aristocracy stage, the effects of declining flexibility start to become more obvious. The company's focus becomes increasingly short-term; their goals are mainly financially oriented and low-risk. The most important aim is to maintain the status quo, what counts in the organization is not what people do, but how they behave (Table 10).

Table 10: Structure of the corporate medical record in “Aristocracy” stage

Name:	Age: Aristocracy
<u>Personal data:</u> - formalities became most important - more emphasis on how things are done, than what was done - formalism - little interest on new targets - employees are worrying about future	<u>Symptoms, complaints:</u> - loss of markets - decrease of revenues - increasing profit without reducing costs - acquiring the enterprise
<u>Immune system:</u> - elegance, quality, values - focus on past achievements, the goodwill	<u>Missing symptoms:</u> -----
<u>Temperature:</u> - normal	<u>Therapy:</u> - improving commitment - to be faced with reality - development instead of routine operations - entrepreneurial spirit

Source: own survey

As it is general in the Aristocracy stage, the company preferred formalities. The main offices of the company was modernized, a fleet of premium category cars was bought, and everything showed the high quality and elegance. In 2008, the company started a new project on their own, which preparations needed a huge amount of money and financial commitments. Aristocracy stage of the examined company is summarized in Fig. 7.

Figure 7: “Aristocracy” stage of the examined company

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Aristocracy (2007-2008. III <sup>rd</sup> quarter)	
EVOLUTION	<u>Personal data:</u> - modernization of the company’s main offices - buying out co-owners	<u>Symptoms, complaints:</u> - decreasing revenues (reduced demand, market saturation) - high proportion of short-term liabilities	REVOLUTION
	<u>Immune system:</u> - goodwill - supporting the local region	<u>Missing symptoms:</u> - stale atmosphere - employees worry about future	
	<u>Temperature:</u> - normal	<u>Therapy:</u> - commitment should be improved instead of relying on goodwill - warning signs should be noticed	

Source: own survey

In the second half of 2008, the economic crises had significant impacts on the financial sector, which resulted that the company entered to the next stage: early bureaucracy. According to Adizes (2004), early bureaucracy stage appears when the company staying in the aristocracy stage is unable to reverse its downward spiral. Organizational performance continues its decline, and the paranoia intensifies. Internal fights increase, and colleagues who are objects of fear and distrust, either are fired or leave (Table 11). This is the situation continues until the company ends up bankrupt or enters the stage of Bureaucracy.

Table 11: Structure of the corporate medical record in “Early bureaucracy” stage

Name:	Age: Early bureaucracy
<u>Personal data:</u> - paranoia - total lack of creativity - internal fights	<u>Symptoms, complaints:</u> - conflicts
<u>Immune system:</u> - seeking for possible solutions - fight against competitors	<u>Missing symptoms:</u> -----
<u>Temperature:</u> - fever	<u>Therapy:</u> - solutions for financing problems - problem communication - creativity

Source: own survey

Because of the financial problems and the lack of new projects, redundancy became unavoidable. The financial situation became more serious as the crisis deepened. The company entered into the early bureaucracy stage, and shortly after this, it became bankrupted. The only therapy would be to find new financial support either by prolongation of

former financial constructions or by new credits, but banks did not support these opportunities, they closed the current account balances, and finally the further operation of the company became impossible. The medical record of this stage is illustrated by Fig. 8.

*Figure 8: “Early bureaucracy” age of the examined company*

CORPORATE MEDICAL RECORD			
NAME: Construction company		AGE: Early bureaucracy (2008. IV <sup>th</sup> quarter)	
<b>EVOLUTION</b>	<u>Personal data:</u> - number of employees reduced to 150 - employees worry about future	<u>Symptoms, complaints:</u> - decrease of revenues and market share - tense atmosphere	<b>REVOLUTION</b>
	<u>Immune system:</u> - the management continuously try to find solution for the problems - commitment of the CEO	<u>Missing symptoms:</u> - paranoia (no suspicion)	
	<u>Temperature:</u> - fever	<u>Therapy:</u> - solving financial problems - future problems should be indicated to the suppliers	

Source: own survey

Summarizing the medical records of the different lifecycle stages, in our opinion, they may have a significant importance for company leaders, as the evolution and revolution features of the different stages could be well recognized by them. While the features of evolution may help the company to remain in the given stage or to step into the next developmental stage, the so-called revolutionary features may bring turbulent changes with negative impacts. The management of the revolutionary stages will principally determine the further development process of the company.

**4. CONCLUSIONS**

In this paper – through the example of the examined construction company – we identified the evolution and revolution stages of its corporate lifecycle. The results of our examinations showed that the different development stages could not be separated sharply, because a transition period may be observed in every cases, as some of the features of the former stage will survive as a residuum in the new stage. The structure and functions of the organization could only be established gradually. In the given case, the leaders of the company did not give up their power easily, so the centralised decisions were typical even in the Prime stage.

Unfortunately, the company declared bankruptcy by 2009, which came into force in July 2009. In our opinion, by the help of corporate lifecycle analysis the examined enterprise could have recognized the warning signs, and the liquidization process could have been avoided by establishing a new, appropriate strategy.

As it was mentioned earlier, it is very complex problem to recognize the particular lifecycle stage of an enterprise, as the differences between stages in most cases are not separated by sharp lines. Thus, the management of the enterprise shall pay attention for the warning signs of the expected changes. The “corporate medical record”, we introduced in our paper, may be a useful tool for determining the most important and most specific features of the different lifecycle stages, as the key characteristics, processes and threats may be recognized by this method, as well as the possible therapies, which may give a solution for the problems. The method is still under further development, in order to improve it by an assessment with grade scales instead of the present subjective evaluation process.



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*Monika Gábrriel, Mátyás Miskolczi*

### **1.3 A SYNTHETIZED MODEL OF DEVELOPMENT OF LOGISTICS ORGANIZATION AND COMPANY LIFECYCLE**

**Summary:** The aim of this study is to map the evolution of logistics organization in companies along their lifecycle. According to our hypothesis different configurations of logistics organization appear at the different periods of companies' life. For the purpose of this study we used Larry E. Greiner's organizational growth model, which was first published in 1972, and actualized in 1998 by the author and the model for logistics organization of D. J. Bowersox et al., published in 2002. We drew a parallel between the two models using the similarities of the corresponding stages of development. We tested the parallelism on a sample of 97 Hungarian companies from the industrial and commercial sectors. We assigned each sample company to a stage of the Greiner model using a fuzzy classification method, then we analyzed the characteristics of logistics organizations for each growth stage. The results of the empirical analysis supported the parallelism between the two models. It can be used as a basis for further studies in this topic and also in practice for management consulting in the fields of organizational development and logistics.

**Keywords:** company lifecycle, organizational growth, logistics, organization

## **1. INTRODUCTION**

Logistics organization is an important issue of international logistics literature. All authors agree in that logistics organization should suit to the internal and external environment of the company. Internally it means harmony with the company organizational structure and strategy, externally it means exploiting possibilities and meeting market expectations. Logistics operations should be effective and efficient in the same time. This means that growing companies need different logistics organizations as they go through their lifecycle.

Organizational growth models give detailed descriptions on company characteristics in each stage of their lifecycle, but do not give details on the different company functions – like logistics. In our opinion each stage of development require different contribution from the logistics function and different logistics organizational structure as well. Defining ideal logistics organization to each stage may be useful for developing companies to form their logistics function.

## **2. LITERATURE REVIEW**

### **2.1 ORGANIZATIONAL GROWTH**

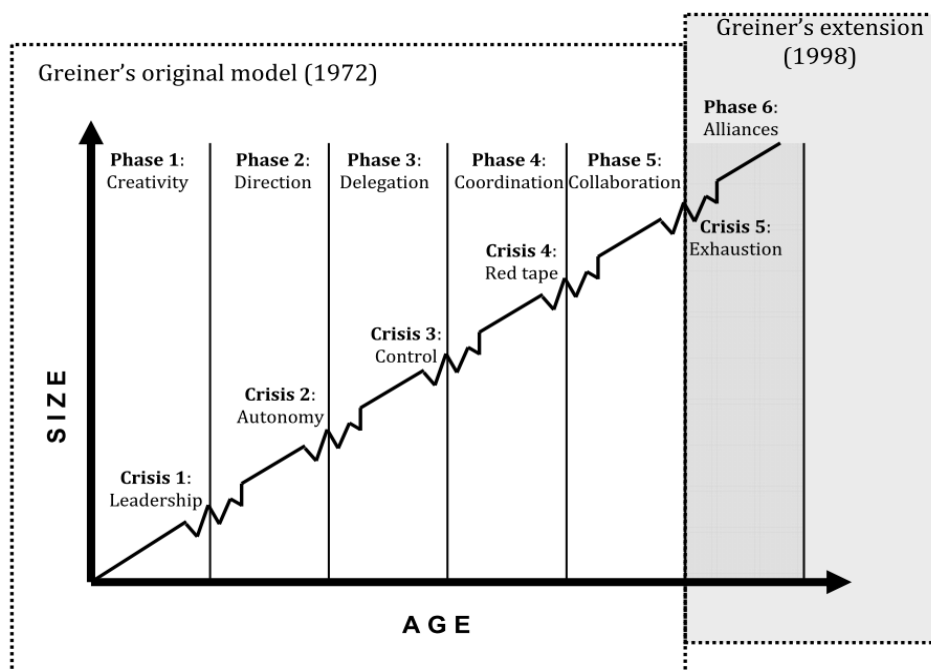
Researchers of organizational development agree that growth of companies can be separated to well-defined stages (Greiner 1972, Churchill-Lewis 1983, Quinn-Cameron 1983, Miller-Friesen 1984, Baird-Meshoulam 1988, Kazanjian 1988, Timmons 1990, Milliman et al. 1991, Adizes 1992, Hurst 1995). Each stage can be characterized by behaviour in the market, organization and management problems. Researchers also agree that it is advantageous for a company if the manager is aware of the logic of growth models and the position of his/her company in the models. According to Göbölös and Gömöri (2004) this makes management more conscious and helps to prepare for future changes and probable

management problems. Tatár et al. (2012) emphasize the importance of managing the revolutionary stages of lifecycle that determine the further development of the company.

For the purpose of this study, we used Larry E. Greiner's organizational growth model, which was first published in 1972, and actualized in 1998 by the author. It is one of the most often cited company growth models, and it is widely used in practice by management consultant companies. The main strengths of the model are that it is universal regarding sector and size, it is detailed enough for our purposes, and its stages are relatively well defined and characteristic.

Figure 1 shows the evolutionary and revolutionary periods defined by Greiner. Although Greiner interpreted one phase as a sequence of an evolutionary phase and a crisis, in our point of view crises have so unique characteristics that their interpretation as a separate phase is reasonable. In the following part of the article we use the abbreviations of the phases (for example 1P for Phase 1 or 3C for Crisis 3) when referring to a phase.

**Figure 1: Growth phases defined by Greiner (1972 and 1998)**



Source: own figure based on Greiner (1972, 1998)

We have no possibility to give details of each phase in this study due to limitations on length but we present the most important features of them from the point of view of this study in Table 3.

## 2.2 LOGISTICS ORGANIZATION

Logistics organizational structures are discussed from different points of view in literature but basic models appear in most works. We reviewed four models for typical forms of logistics organization: Lambert et al. (1998), Bowersox et al. (2002), Frazelle (2002) and Rushton et al. (2006). Table 1 shows the structures discussed by these authors.

We found Bowersox's approach is the most suitable for the purposes of this study as it is an evolutionary approach in contrast with Frazelle's, and it is more detailed than the other two evolutionary models. Dividing the functional integration into three steps makes it more suitable for finding correspondence between the growth phases and the logistics organization structures as integration can go on gradually. Therefore, we use the Bowersox model as a basis and complete it with the ideas of the other three authors.

**Table 1: Logistics organizational structure types in logistics literature – summary table**

<b>Bowersox-Closs-Cooper (2002)</b>	<b>Frazelle (2002)</b>	<b>Lambert-Stock-Ellram (1998)</b>	<b>Rushton-Croucher-Baker (2006)</b>
Phase 0. Fragmented functional structures	-	-	Traditional organizational structure
Phase 1. Functional aggregation 1	-	-	-
Phase 2. Functional aggregation 2	Functional organization	-	-
Phase 3. Functional aggregation 3	Integrated logistics organization	Logistics as a function	Functional structure
	Global logistics organization		
Phase 4. Process integration	Process organization	Logistics as a program	Process-driven organizational structure
	Matrix organization	Logistics as a matrix organization	Matrix organizational structure
Phase 5. Virtuality and organizational transparency	Distributed logistics organization	-	-
-	Business unit logistics organization	-	-

Source: own table based on Bowersox et al. (2002), Lambert et al. (1998) and Rushton et al. (2006)

*Stage 0. Fragmented functional structures*

These structures are typical for traditional or young organizations. Logistics activities are dispersed to Marketing, Manufacturing and Finance functions. This fragmentation means the lack of cross-functional coordination which results in distortion or delay of information, duplication and waste. (Bowersox et al. 2002) Lines of communication are unclear so it is often impossible to optimize the different logistics sub-functions for effectiveness and efficiency. (Rushton et al. 2006)

*Stage 1. Functional aggregation 1*

The first step towards integration is grouping the logistical activities within the original function. The overall organizational structure and hierarchy do not change significantly. Typical aggregations in this phase are for example:

- marketing: aggregation of customer service activities
- manufacturing: aggregation of materials management activities.

This organization still does not provide integrated inventory management and does not handle trade-offs between inventory and transportation costs. (Bowersox et al. 2002)

*Stage 2. Functional aggregation 2*

Logistics as a separated function appears in the organizational chart with own authority and responsibility. The logistics department usually involves physical distribution and material management at this stage. It still does not include some important logistical activities such as procurement or order processing, these tasks are performed by other functions. Limited communication and coordination between functions result in the lack of efficiency. (Bowersox et al. 2002) Another weakness is that since the logistics department performs only transportation and warehousing activities, it aims to minimize only these costs. This can lead to growing overall logistics costs and service level problems due to trade-offs. (Frazelle 2002)

*Stage 3. Functional aggregation 3*

In this phase of aggregation, the aim is to integrate all possible logistical activities within the boundaries of a single functional unit and exploit synergies. The logistics function includes planning and operations as well, so logistics get into strategic level. (Bowersox et al.

2002) Advantage of the integration is that it can handle trade-offs, and overall logistics cost, service level and efficiency can be optimized. Responsibility is delegated to a Chief Logistics Officer (CLO). (Frazelle 2002) Global logistics organization is an extended version of integrated logistics organization, which is responsible for all logistical activities of a company operating in more than one regions. (Frazelle 2002)

Despite the integration, there are still problems, generated by the characteristics of functional organizations:

- overall company performance is still not optimal, considering there is no full cooperation between the functions. (Lambert et al. 1998)
- it focuses on internal operations, the customers' expectations get less emphasis than needed. (Rushton et al. 2006)

#### *Stage 4. Process integration*

Process-oriented organizations are able to reach a higher level of service and productivity than functional organizations. Process management appears in the following two types of organization.

- In process organization or process-driven organization, the core business process defines its requirements for logistical activities, which are performed by the logistics function. All activities are driven by the key performance objectives of the core process, the other processes only service them. (Frazelle 2002, Rushton et al. 2006)
- Matrix organization is a combination of functional and process organization. Usually planning is the responsibility of the process manager, while operations are the responsibility of the functional manager. This provides high-level customer service through process management and cost efficiency through functional optimization. (Frazelle 2002, Lambert et al. 1998, Rushton et al. 2006)

Process-oriented organizations also have to face problems and dilemmas:

- How can an organization be structured so that it can manage a process as complex as global logistics without becoming overly bureaucratic? (Bowersox et al. 2002)
- It is impossible to meet perfectly the demands of service quality and efficient operation at the same time. Depending on the abilities of the functional and process management one of the goals will not be reached. (Frazelle 2002)
- Coordination gets complicated due to functional egoism, so running such an organization requires constant support of top-level management. (Lambert et al. 1998, Rushton et al. 2006)

#### *Stage 5. Virtuality and organizational transparency*

These are the organizations of the future, but some companies (for example Dell) already apply this structure. Logistics operations are dispersed to different functions or processes under the coordination of a CLO. Advanced IT systems provide coordination through common database and information sharing, making optimization possible not only in company level but across companies in the supply chain. Performing operations locally provides the best competences and flexibility. (Frazelle 2002, Bowersox et al. 2002)

## **2.3 SYNTHESIS OF THE TWO MODELS**

### **2.3.1 Organizational growth as a different context for development of logistics**

All authors cited in the previous section – except for Frazelle – defined the different organizational structures as stages of historical development. They assigned each structure to the era they had appeared and had been applied by big US companies. The way of development is shown in Table 2.

**Table 2: Development of logistics organization**

<i>Phase of development</i>	<i>Representative era</i>
Stage 0. Fragmented functional structures	Up to the 1950s
Stage 1. Functional aggregation 1	Late 1950s – early 1960s
Stage 2. Functional aggregation 2	Late 1960s – early 1970s
Stage 3. Functional aggregation 3	1980s
Stage 4. Process integration	2000s
Stage 5. Virtuality and organizational transparency	Presently and in the future

Source: own table based on Bowersox et al. (2002 p.521-530), Lambert et al. (1998 p.437-438) and Rushton et al. (2006 p.164-170)

Interpreting organizational solutions as historical development is only one point of view that applies only to the most developed companies of one of the most developed economies of the world. This approach excludes companies that stopped growing at small or medium size or companies that are in the beginning of their lifecycle.

In our opinion, the stages of historical development correspond with the stages of company development. In new, small and not logistics-intensive companies (as the ones in the Creativity or Leadership phase) logistics-related activities are dispersed in the organization, often performed together with other tasks by the same employee. As the company grows, these activities are more consciously organized, and there is a growing need for efficient and transparent operations. This forces companies to step into the phases of functional aggregation 1 and 2, typically when the company is in the phase of Direction.

Full functional integration (Stage 3) is reached by large or very consciously managed middle-sized companies, where the logistics function is fully developed and tasks are cleared. This is usually in the Delegation phase or later.

Process integration is the solution when companies aim to rationalize their operations and focus on supply chain partnerships typically in the phase of Coordination. There is large emphasis on inter-organizational management at this stage. Logistics function is often expanded and is referred to as SCM function.

Virtual organizations are applied by few companies so far, but it can be a good solution for the challenges of the Collaboration phase. The solution lies in advanced IT systems that provide coordination within and between companies. The presence of logistics experts are beneficial in the fields of supplier relationship management, CRM, customer service management, demand management, order fulfilment, manufacturing flow management and product development. However, this phase of development, like virtual organizations is a subject of recent researches.

Based on the conjecture that the development of logistics organization is parallel with company growth, we attempted to link a growth model with the theory of logistics organization. The new, joint model can help to identify the ideal logistics organization with the help of growth phases. The models of Greiner and Bowersox et al. seem suitable for this purpose.

### **2.3.2 Linking the two models**

The two models show several similarities. Both of them are evolutionary models, and they are similarly detailed. Both of them give a description to each stage of development using the same types of attributes (size, organizational questions, tasks assigned to operational or

strategic level, delegation, use of planning and controlling methods, information flow). The correspondence of the two models is shown in Table 3.

**Table 3: Correspondence between Phases of growth (Greiner) and logistics organization (Bowersox)**

Organization (Bowersox et al.)	Characteristics of logistics organization	Characteristics of growth phase	Phase of growth (Greiner)
Stage 0. Fragmented functional structures	<ul style="list-style-type: none"> <li>▪No independent logistics organization</li> <li>▪Logistics activities dispersed to other functions</li> <li>▪Duplication of tasks</li> <li>▪Lack of functional coordination</li> </ul>	<ul style="list-style-type: none"> <li>▪No independent functional units</li> <li>▪Functions integrated to core activity</li> <li>▪Functional objectives not determined</li> </ul>	Phase 1: Creativity
Stage 1. Functional aggregation 1	<ul style="list-style-type: none"> <li>▪Grouping of some logistics tasks within the original function</li> <li>▪No integrated inventory management</li> </ul>	<ul style="list-style-type: none"> <li>▪Formulating functional units</li> <li>▪Functional and company objectives not harmonized</li> </ul>	Crisis 1: Leadership
Stage 2. Functional aggregation 2	<ul style="list-style-type: none"> <li>▪Independent logistics unit</li> <li>▪Involves physical distribution and material management</li> <li>▪Limited communication between functions</li> <li>▪No company-level optimization</li> </ul>	<ul style="list-style-type: none"> <li>▪Functional structure</li> <li>▪Basics of controlling and planning</li> <li>▪Middle line managers</li> </ul>	Phase 2: Direction
		<ul style="list-style-type: none"> <li>▪Executive is the only decision-maker</li> <li>▪Communication between functions only through the executive – decrease in performance due to overload</li> </ul>	Crisis 2: Autonomy
Stage 3. Functional aggregation 3	<ul style="list-style-type: none"> <li>▪Most logistics activities done in one unit</li> <li>▪Logistics on strategic level</li> <li>▪Company-level optimization in logistics</li> <li>▪Logistics information system</li> <li>▪Limited cooperation with other functions</li> </ul>	<ul style="list-style-type: none"> <li>▪Delegation of decision-making to functional managers</li> <li>▪Faster and more efficient operations and information flow</li> </ul>	Phase 3: Delegation
		<ul style="list-style-type: none"> <li>▪Lack of control over functional units</li> <li>▪Inconsistence between company and functional strategy</li> </ul>	Crisis 3: Control
Stage 4. Process integration	<ul style="list-style-type: none"> <li>▪Activities driven by the key performance objectives of the core process</li> <li>▪Intensive information flow between functions</li> <li>▪High-level service and productivity</li> <li>▪Conflicts between process and functional objectives</li> <li>▪Risk of being overly bureaucratic</li> <li>▪Coordination problems</li> </ul>	<ul style="list-style-type: none"> <li>▪Transparent structure and controlling system</li> <li>▪Fulfilment of company goals precisely tracked</li> <li>Effective and efficient operation</li> </ul>	Phase 4: Coordination
		<ul style="list-style-type: none"> <li>▪Growing bureaucracy</li> <li>▪Conflicts between management and operations</li> <li>▪Slowing decision-making, decreasing efficiency</li> </ul>	Crisis 4: Red tape
Stage 5. Virtuality and organizational transparency	<ul style="list-style-type: none"> <li>▪Disintegration of logistics processes</li> <li>▪Developed IT support</li> <li>▪Virtual integration and physical dispersion</li> <li>▪Integration with other functions and across the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>▪Efficient cooperation between organizational units</li> </ul>	Phase 5: Collaboration

Source: own table based on Bowersox et al (2002) and Greiner (1972)



### 3. MATERIAL AND METHOD

#### 3.1 COMPANY SAMPLE

We have tested the parallelism of the two models on a sample of Hungarian companies. The observed companies were chosen by field of activity, where logistics is a relevant but not core activity and therefore the presence of the logistics organization is possible. Regarding to company size the minimum number on FTEs was 10. The observed companies are active in manufacturing or commerce.

C-level managers of the sample companies filled in a questionnaire in frames of a personal interview. Questionnaires were prepared between February and May 2009, the number of interviews made was 120. Only 97 of them were analysed due to insufficient answers on critical questions.

The sample involved 49 commercial and 48 manufacturing companies. Nearly half of them (49 companies) is seated in Budapest, the rest of the companies are nearly evenly distributed geographically (21 companies from the western and 27 companies from the eastern part of Hungary).

Most of the companies (85) were founded after 1990, the rest operated as a large socialist company before their privatisation. For examining organic development, the first group is more suitable, since they had the possibility to grow within a market environment. However, these companies are too young for the purpose of this study, as they could not reach a higher phase of growth.

The size of the sample companies does not reflect the distribution of company sizes in the Hungarian economy. The reason for it is the overwhelming presence of micro- and small sized enterprises on the market. A representative sample would have caused the lack of more developed companies in the sample and would have made the examination of later stages of development impossible. Therefore, medium and large sized companies are overrepresented in the sample. The distribution of the companies is the following:

Revenue:	0-3 billion HUF:	67
	3-15 billion HUF:	23
	above 15 billion HUF:	7
Employees:	10-49 employees:	60
	50-249 employees:	21
	above 250 employees:	16

The organizational structure of the sample companies is also important of our point of view as it affects the structure of logistics organization. Most of the companies have simple structure (39 companies) or functional organization (43 companies). Divisional organization (12 companies) and matrix structure (3 companies) are also represented.

#### 3.2 RESEARCH METHODOLOGY

The aim of the questionnaire was to assign the sample companies to the phases of the growth model as precisely as possible, then examine the management and logistics characteristics in each phase. Since we were intent to gain a complex picture of the sample companies, we created three groups of questions: one for general attributes and management (questions no. 1-8 and 10), one for company environment (questions no. 11-18) and one for company logistics (questions no.19-30). We processed and analysed the data of the survey with MS Excel and MINITAB softwares.

The first step of data processing was the assignment of sample companies to Greiner's growth phases (company classification). We used a fuzzy classification method for this

purpose (Miskolczi-Gábrriel 2008, 2012). The classification was based on a group of questions dedicated to the attributes a company should have in each phase of growth. The interviewee had to mark on a four-grade scale, how characteristic are these attributes to their companies. The answers were then converted to fuzzy membership functions by using correspondence matrices in which we defined the relationship between each answer and the membership degree in each phase. The final step was the defuzzification of the membership function with MOM method to get a crisp (the one most typical) result for growth phase.

The second step was the analysis of logistics characteristics of the company based on a group of questions dedicated to logistics. The aim of this step was to check whether the companies classified into a given growth phase show the characteristics of the corresponding stage of logistics organization given in Table 2. We checked the following characteristics:

- existence and type of logistics organization,
- number of employees doing logistics-related tasks,
- logistics related activities done by the companies (number and type),
- location of the tasks above (operational and strategic) in the organizational structure.

#### 4. RESULTS

After the classification of companies, we got the result shown in Table 4. Although the medium and large companies were overrepresented in the sample compared to their presence in the Hungarian market, only a few companies were assigned to phases 3P-5C. This was not enough to draw statistically significant conclusions; therefore statements can be only made for phases 1P-2C. We give forth the results of phases 3P-5C but as they are only informative data, we mark them with *cursive letters*.

**Table 4: Result of classification**

<i>Growth phase</i>	<i>No. of companies</i>	<i>Growth phase</i>	<i>No. of companies</i>
1P	24	4P	3
1C	21	4C	2
2P	18	5P	6
2C	13	5C	3
3P	1	not classified	5
3C	1	<b>Total</b>	<b>97</b>

Source: own research

For the existence and type of logistics organization, we got the results shown in Table 5.

**Table 5: Logistics organization in the growth phases**

<i>Phase</i>	<i>No. of companies</i>	<i>Logistics organization</i>		
		<i>none</i>	<i>simple</i>	<i>integrated</i>
1P	24	<b>100%</b>	0%	0%
1C	21	<b>100%</b>	0%	0%
2P	18	<b>78%</b>	22%	0%
2C	13	<b>77%</b>	15%	8%
3P	1	<b>100%</b>	0%	0%
3C	1	0%	<b>100%</b>	0%
4P	3	0%	33%	<b>67%</b>
4C	2	0%	<b>100%</b>	0%
5P	6	0%	17%	<b>83%</b>
5C	3	0%	0%	<b>100%</b>

Source: own research

In phases 1P and 1C none of the companies have logistics unit, which is in accordance with the characteristics of fragmented structure and functional aggregation 1 (in this case there is still no independent organizational unit for logistics). Logistics organization appears first in phases 2P-2C in the model. It is supported by the results, although the number of companies without logistics unit is still high. From phase 3P results are not reliable but they show the pattern the model suggests as all companies have logistics organization, and from phase 4P there is a strong presence of integrated logistics. Virtual organization (stage 5) is not present for two reasons: this structure is not common yet, and it is applicable only at global level, while this study involved only the Hungarian affiliates, not global companies as a whole.

Table 6 shows the number of employees performing logistics-related tasks in each phase. The small number of employees in phase 1P explains the lack of organizational unit. Several companies of phases 1C-2C still do not have enough employees doing logistics that would require a separate organizational unit. These companies perform non logistics-intensive activities, therefore logistics do not appear in strategic level. However, the first level of functional aggregation can be completed even in these companies.

**Table 6: Number of employees doing logistics in the growth phases**

<i>Phase</i>	<i>No. of companies</i>	<i>Number of employees</i>		
		<i>minimum</i>	<i>maximum</i>	<i>average</i>
1F	24	0	5	2,1
1K	21	1	25	4,9
2F	18	1	30	8,1
2K	13	0	100	13,1
3F	1	5	5	5
3K	1	20	20	20
4F	3	60	250	126,7
4K	2	4	15	9,5
5F	6	18	490	145,8
5K	3	100	2300	850

Source: own research

We also examined the relationship between type of logistics organization and number of employees. According to the results in Table 7, no logistics unit was created under 8 employees. At the same time there were companies with 20 and 25 employees but without organizational unit in logistics. Naturally, functional aggregation 1 could be completed in these companies. Integrated logistics organization can be found in the sample even by an employee number of 20, but the typical number of employees in this group was significantly higher, above 100 people.

**Table 7: Number of employees doing logistics in the different types of organization**

<i>Logistics organization</i>	<i>Number of employees</i>		
	<i>minimum</i>	<i>maximum</i>	<i>average</i>
none	0	25	3,7
simple	8	70	21,5
integrated	20	2300	328

Source: own research

We overviewed the presence and position of logistics activities in the company organization. In the following we summarize our findings for the first four phase – where there were enough sample companies to examine.

There were no companies in phases 1P and 1C where the name of the unit carrying out logistics activities contained the word “logistics”. The typical organizational units doing

logistics activities were “production”, “sales” and “maintenance/engineering” depending on the core activity of the company. The average number of logistics-related employees was 2.1 in 1P and 4.9 in 1C.

In phase 1P all of the planning and controlling activities were done by the company manager, employees performed operational tasks. The most often mentioned tasks were the following:

- Operative purchasing
- Providing information on suppliers to production
- Material handling
- Preparation of material for production
- Providing information on production to warehouse
- Quality check
- Packaging, finishing
- Providing information on stocks to sales
- Commission
- Distribution
- Return goods handling
- Waste handling

These tasks were assigned in most cases to the following units:

- production/factory
- sales/commerce
- technical group.

The employees doing logistics were not grouped within these units in 1P, which is in accordance with the description of fragmented functional structures in the Bowersox model.

This organizational structure became a little more sophisticated in 1C where subgroups appeared within the three functions above. The sample companies mentioned the following units:

- purchasing
- warehouse
- quality department
- distribution
- service department.

This structure fulfils the criteria of functional aggregation 1.

Logistics organization appears first in phases 2P-2C. This unit involves at least the activities connected to physical distribution, and the word “logistics” appears in its name. However, logistics is not considered at strategic level, and activities such as purchasing, inventory management or packaging still belong to the production or sales unit. This is in accordance with functional aggregation 2.

The average number of employees performing logistics tasks is 8.1 in 2P and 13.1 in 2C. The most often mentioned tasks were:

- Operative purchasing
- Providing information on suppliers to production
- Material handling
- Packaging, finishing
- Providing information on production to warehouse
- Inventory management
- Providing information on stocks to sales
- Commission
- Distribution
- Return goods handling
- Waste handling

For phases 3P and 3C we do not have statistically relevant results due to the small number of companies, but both of the two companies of these phases have logistics unit. The number of companies in the rest of the phases is still small to draw significant conclusions, but we have found that 15 out of the 16 companies have organizational unit dedicated to logistics, and in phases 5P-5C all companies have process organization (stage 4 in the Bowersox model).

For logistics activities, we found that the first activities carried out by the logistics unit belong to physical distribution, while planning and control of logistics processes stay in the hands of top management or controlling even in higher levels of growth. Only 2 companies of the phases 5P and 5C delegated these tasks to the logistics organization.

Overall, the results of the survey confirmed the parallelism of the two models in case of the stages where the number of companies was sufficient for statistical analysis. In the case of the other stages characteristics were also in accordance with the Bowersox model.

## 5. DISCUSSION

As the result of this study that we determined the stage of development and the typical organizational structure of company logistics along the Greiner model. The configurations given by Bowersox et al. (2002) proved to be suitable as a basis for possible structures of logistics organization. The assumed parallelism between the growth phases of the Greiner model and the stages of development of logistics organization defined by Bowersox was validated by the survey data, so a correspondence between the two models was made.

This parallelism can be used in further scientific or practical analysis of company logistics. If a company is assigned to one phase in the Greiner model, a typical structure of logistics organization can be defined for it. This can help managers for example in the following situations:

- Taking up new activities, especially activities involving logistics-related tasks. These new tasks can be assigned to existing organizational unit more easily. Taking into consideration the actual development stage of the logistics function helps to create a functionally consistent organization.
- Rapid growth of employee number, which often leads to inconsiderate enlargement of existing organization according to the literature of growth models. The joint model can give an idea on which unit is to be enlarged or when new units are to be created.
- Recognizing the necessity organizational changes becomes easier if the manager constantly monitors the growth phase of his/her company.
- When the management plans the reorganization of processes, the joint model can help to select the most suitable organizational solutions. It provides that the new organization will harmonize with the growth phase of the company, which helps to eliminate the symptoms of crisis periods.

The joint model can also be a good tool for management consultants regarding the same management problems.

There are some limitations of this study as well. The sample used for our survey shows distortion compared to the population in its parameters (age and size) in favour of larger companies. Although these companies were overrepresented in the sample, the members of the late growth phases did not reach the number that would have made statistical results significant. For the complete verification of the joint model further surveys should be made on more developed companies (3P and upwards).

Fitting affiliates of multinational companies into a growth or lifecycle model designed for organic growth is also a problematic point of this research. These are large, important but young companies, therefore they do not fit into the growth models, which are all created for organic development. The involvement of these companies in a growth model can be a way of the renewal or expansion of the original models.

## 6. CONCLUSION

The most important result of this study is the linkage between the stage of development and the typical organizational structure of company logistics along the Greiner model. As a basis for possible structures of logistics organization, we took the configurations given by Bowersox et al. (2002). In the course of the survey, we found a parallelism between the growth phases of the Greiner model and the stages of development of logistics organization defined by Bowersox. The survey data validated the correspondence between the two models. This parallelism can be used in further scientific or practical analysis of company logistics: if a company is classified in the Greiner model, a typical structure of logistics organization can be defined for it.

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*Luminița Nicolescu, Ciprian Nicolescu, Elena Nicolae*

#### **1.4 ROMANIAN SME'S AND THEIR HUMAN RESOURCE MANAGEMENT: RECENT TRENDS AND PROPOSALS FOR FUTURE**

**Summary:** This paper looks at how Small- and Medium-sized Enterprises from Romania use different human resource practices. Its main objective is to analyze the dynamics of the human resource management strategies used by Romanian SMEs in the period 2004-2011. This perspective will envisage aspects such as the evolution of the average number of employees in SMEs, the employees' training activities, the skills and competences required from employees in SMEs and the evolution of the average wage in SMEs. The paper envisages to identify changes in the HRM strategies used by SMEs in the context of the shift from a good economic climate to a economic crisis period. Finally, the paper will advance proposals for the improvement of the SMEs human resource management strategies in Romania.

**Key words:** human resource management, Small and Medium Sized Enterprises, Romania

### **1. HUMAN RESOURCE MANAGEMENT FOR SMEs IN THE LITERATURE**

Small and Medium Enterprises (SMEs) are absolutely predominant in most economies, representing more than 99% of all the companies, as statistics in almost all the countries show, and also have substantial influence on generating the gross domestic product and the supply of jobs (Savlovschi and Robu, 2011).

Since most researchers agree that SMEs are an important part of the modern economy, it is natural to focus on people which are an SME's most important asset. More specifically, it is important to focus on the managing of the people, which academically speaking is usually referred to as human resource management (HRM). HRM deals with the attraction, selection, training, assessment, and rewarding of employees (Marlow, 2006). HRM became popular in the late 1970s as a managerial approach aimed to ensure employee efforts were strategically focused on achieving organisational performance and competitiveness in increasingly volatile markets.

HRM in SMEs is a field that has relatively recently started to be explored and the literature shows that research is still ongoing. The corpus of literature is not mature and contributions are still fragmented. Firms, attempting to find evidence of HRM in small firms will not be particularly productive. According to Heneman et al. (2000, p.20) "the literature appears to be rich in prescriptions, limited in sound descriptive surveys and sparse in analytical research". One of the possible reasons explaining the fragmentation of literature is because HRM in small companies is considered to be an emergent process. In addition, the HRM process in SMEs is perceived as being reactive as opposed to a planned process (Duberley and Walley, 1995) which is usually encountered in large companies. Cassell et al. (2002, p. 689) also consider that "the approach that SMEs take to HRM is fairly piecemeal and reactive, rather than proactive, holistic or systemic".

There are three main trends than can be distinguished by reviewing the literature of HRM in SMEs as presented in Nicolescu et al. (2012):

1. Traditional knowledge on HRM topics that applies to large companies – such as recruiting, performance assessment, compensation – might not always apply to small and emergent companies considering there is a far greater degree of informality in SMEs than in larger workplaces (Brand and Bax, 2002; Cardon and Stevens, 2004; Harney and



Dundon, 2006). At the moment HR theories are mainly developed and tried out in large companies (Heneman et al, 2000) therefore one can consider HRM practices as best practices in big companies but it is questionable how they translate to SMEs. Also national culture, historical background, and economic and political climates contribute to the how HRM practices are used and perceived and it is difficult to discuss about HRM for SMEs in general/at international level.

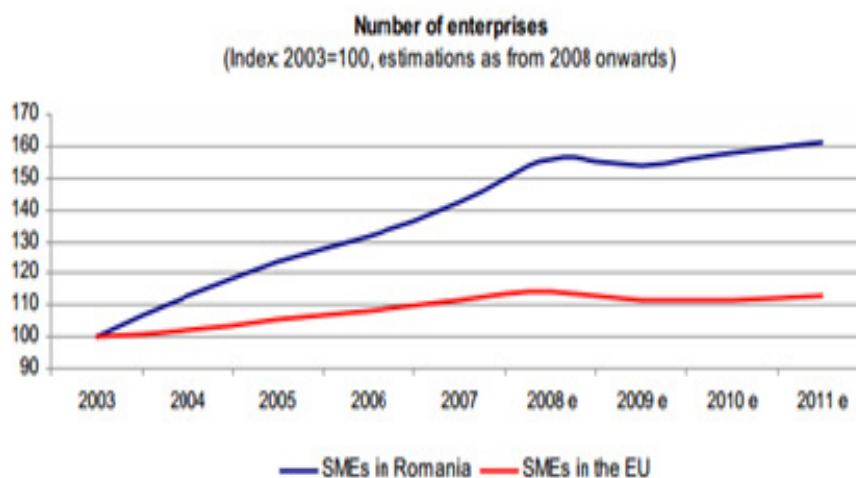
2. HRM activities contribute in offering a competitive advantage for SMEs (Ferligoj, Pranikar and Jordan, 1997; Brand and Bax, 2002). Hiring people with high potential, offering good benefits, focusing on creativity and innovation, in other words implementing good HR practices, provides a competitive advantage for the company. Motivation and effective management of people is seen as important for the success of small companies (McEvoy, 1984). Employees should be properly managed as to allow them to reach their full potential and thus bring more added value to the firm (King, Solomon, and Fernald, 2001).
3. There is a shift towards strategic HRM in small companies. Strategic HRM can be seen as a) HRM practices that contribute highly to the implementation of strategic choices in terms of management, at company level (Dubberley and Walley, 1995; Van De Woestyne, Dewettinck and Van Bruystegem, 2010) and b) HRM thinking is seen as a full partner to strategic decision making (Brand and Bax, 2002).

As far as content of SME's HRM research goes, most researches illustrate a case study on a specific country. An explanation can be the greater degree of informality in small companies and also the fact that they are more exposed to influences from external factors (Harney and Dundon, 2006). Also most papers tend to have a more practical approach and are not highly theoreticised. This might be understandable considering cultural differences in various countries, although there seem to be practices used by SMEs in general – such as word of mouth hiring (Bacona and Hoqueb, 2005; Tocher and Rutherford, 2009).

## 2. SMEs AND THE ROMANIAN ECONOMY

Romania's SME sector has similar characteristics with the European Union (EU) SMEs, even though the European Union has a comparatively higher share of micro firms.

*Figure 1.: Comparison between number of Romanian and EU SMEs*



Source: [http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2010-2011/romania\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2010-2011/romania_en.pdf), accessed at 1 July 2012

The sector level distribution in Romania shows that the concentration of SMEs is the highest in wholesale and retail trade (44 %), followed by service sectors such as hotels and catering, transport, real estate and business services (29 %), construction (18 %) and manufacturing (11 %) (EC, 2012a).

The Romanian economy had a positive development after 2000 up to the beginning of the world level economic crisis, as the evolution of the real GDP reflects (Table 1.)

**Table 1: The evolution of real GDP in Romania in the period 1999-2010 (%)**

<i>Country</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Romania	-4.8	2.2	4.8	4.5	4.9	8.1	4.1	7.7	6	7.1	-7.1	-1.3

Source: <http://www.indexmundi.com>, accessed at 29 February 2012

Romania is one of the European countries that were worse hit by the recession, as its economic expansion relied more on foreign direct investments which dried up when the effects of the global crisis were felt by investors. Romania's GDP dropped by 7.1 % in 2009 and contracted further by 1.3 % in 2010. The unemployment rate increased from 5.8 % in 2008 to 8.4 % in 2009 but further dropped to 7.7 % in 2010 (EC, 2012a).

The crisis has taken a toll on Romanian enterprises, putting a temporary stop to the positive long-term developments in the number of SMEs and their contribution to employment and economic value added. In employment terms, it is interesting to see that the SMEs were much more reluctant to shed employees during the crisis than the large firms (EC, 2012a). In fact, during 2008–2010, it is estimated that Romanian SMEs maintained their workforce at pre-crisis level, while the large enterprises shed about 6 % of their workers (EC, 2012a). In this context, the paper looks at a few HRM practices in SMEs.

### 3. METHODOLOGY

The main objective of this paper is to illustrate how human resource practices have evolved in Romanian SMEs over time. The main bibliographical source used is the White Charter of SME's from Romania with its annual editions from the period 2003-2011. A first analysis was conducted by the authors in this respect in 2012 (Nicolescu et al, 2012).

The analysis of the human resource practices in SMEs is based on the results of the yearly survey published in every edition of the abovementioned document. SMEs are grouped in 3 categories: microenterprises (with less than 10 employees); small enterprises (10-50 employees) and medium enterprises (50-250 employees), also with the turnover up to 8 mill. Euro or total assets up to 7 mill. Euro, according to both European Union criteria and the Romanian legislation.

Table 2 presents details on the size and structure of the SMEs samples that have been comprised in the surveys and whose results are compared and analyzed in this paper.

The samples were presented as being representative at national level. The surveys organized in all years used the same methodology and a similar set of questions, ensuring in this way the comparability of results in all years included in the study.

The surveys with the SMES are usually conducted in the first months of every year. Therefore, the SMEs answers from a particular year's edition are seen to reflect the opinions about the year that just passed. For example, the results presented in the 2008 edition of the White Charter are considered to reflect the perceived situation for the year 2007 and the beginning of year 2008 and are presented and noted as 2007/2008. Some data is unavailable for the whole time-period analyzed.

*Table 2.: Structure of the SMEs samples in the period 2004-2011*

<b>SMEs structure on age</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>TOTAL</b>	<b>1378</b>	<b>1398</b>	<b>1306</b>	<b>1178</b>	<b>1256</b>	<b>1099</b>	<b>1485</b>	<b>1723</b>
Under 5 years	35.39%	40.49%	37.33%	40.58%	43.31%	36.81%	34.83%	37.05%
5-10 years	32.89%	30.76%	24.65%	24.36%	23.17%	31.85%	22.76%	23.75%
10-15 years	29.66%	27.54%	36.48%	24.49%	21.10%	11.87%	15.75%	21.45%
Over 15 years	2.06%	1.22%	1.54%	8.57%	12.42%	19.47%	26.75%	17.76%
<b>SMEs structure on size</b>	<b>1378</b>	<b>1398</b>	<b>1306</b>	<b>1178</b>	<b>1256</b>	<b>1099</b>	<b>1485</b>	<b>1723</b>
Micro-enterprises	53.97%	55.29%	62.43%	53.48%	64.10%	52.68%	66.20%	71.83%
Small enterprises	32.35%	30.83%	27.73%	33.45%	26.44%	34.85%	24.32%	21.83%
Medium enterprises	13.68%	13.88%	9.84%	13.07%	9.46%	12.47%	9.48%	6.44%
<b>SMEs economic branches</b>	<b>1378</b>	<b>1398</b>	<b>1306</b>	<b>1178</b>	<b>1256</b>	<b>1099</b>	<b>1485</b>	<b>1723</b>
Industry	26.44%	17.17%	17.50%	21.41%	22.41%	21.05%	19.48%	17.22%
Building	8.01%	7.65%	6.66%	11.61%	12.67%	10.43%	6.79%	6.67%
Trade	34.31%	45.92%	44.78%	38.95%	34.45%	38.60%	35.60%	37.64%
Tourism	2.54%	4.86%	2.81%	3.18%	3.48%	2.31%	8.88%	7.49%
Transportation	6.14%	6.44%	6.66%	7.57%	8.21%	5.63%	5.75%	10.48%
Services	22.56%	17.95%	21.59%	17.28%	18.78%	21.98%	23.51%	20.49%

Sources: CNIPMMR, Carta Albă a IMM-urilor din România, (White Charter of SMEs from Romania), Editions 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011

#### **4. THE EVOLUTION OF HUMAN RESOURCE MANAGEMENT STRATEGIES USED IN ROMANIAN SMEs: 2004-2011**

This analysis comes to complete and extend the analysis on the dynamics of human resource management in SMEs done by the authors in 2012 (Nicolescu et al., 2012). Consequently, the evolution of the human resource management of SMEs from Romania is studied from the perspective of a number of aspects: a) the number of employees (newly hired, structure), b) the criteria used by SMEs to evaluate and assess employees, c) the evolution of wages of employees in SMEs and d) the training activities for employees.

The number and structure of employees is looked at from two points of view: the newly hired employees and the structure of employees on criteria such as education and experience in the field. The newly hired employees reflect the development of the economic activity in SMEs at the sector level and the development of the economic activity at national level, as well. The structure of employees in SMEs reflects the type of employees that the sector can attract giving us an image on the profiles of employees in the sector.

As we have seen, HRM includes aspects related to hiring and firing employees. In case of the Romanian SMEs the progress of the newly hired employees over a period of 8 years from 2004/2005 to 2010/2011 is presented in Table 3.

As an overall observation, it can be said that SMEs declared that they hired new persons every year, illustrating once again, their role as an important employer in the economy, as emphasized again recently by a report of the European Commission (EC, 2012a). The proportions of newly employed people varied with an increasing majority of SMEs employing

less than 5 persons/year. Less than 30% of the SMEs employed more than 5 employees in 2004-2005 and the proportion went down to less than 6% in 2010/2011.

**Table 3.: The number of newly hired employees in the last year** (% of SMEs)

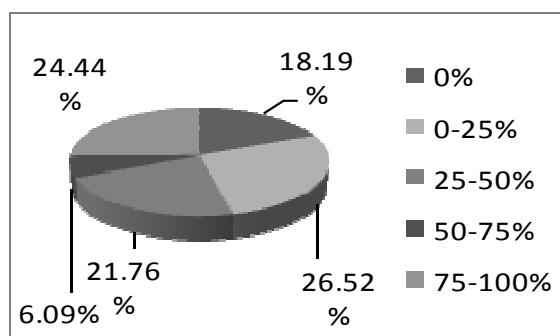
<i>Number of newly hired employees</i>	<i>2004/2005</i>	<i>2005/2006</i>	<i>2006/2007</i>	<i>2007/2008</i>	<i>2008/2009</i>	<i>2009/2010</i>	<i>2010/2011</i>
Less than 5 persons	73.40	78.78	79.53	84.61	81.09	93.29	94.17
5-10 persons	14.62	11.46	8.92	7.49	7.39	3.64	3.79
11-20 persons	6.60	5.49	6.30	3.95	7.68	1.64	0.78
Over 20 persons	5.38	4.27	5.25	3.95	3.84	1.43	1.26

Sources: CNIPMMR, Carta Albă a IMM-urilor din România (White Charter of SMEs from Romania), Editions 2005, 2006, 2007, 2008, 2009, 2010, 2011

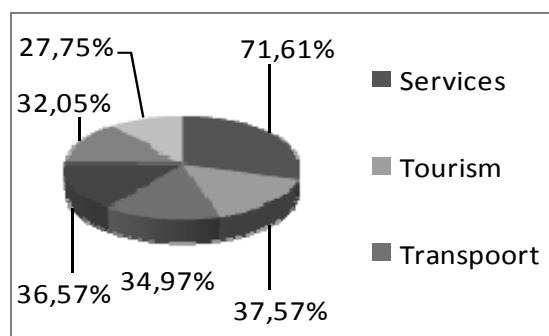
However, the evolution of new employment in SMEs in the studied period was influenced by the evolution of the economic development of the country. The real GDP/capita has known an ascending growing trend from 2000 to 2004, and after 2004 it increased on a yearly basis but with varying percentages until 2008, when real GDP/capita started to decrease. (See Table 1.) The number of newly hired employees in SMEs registered a descending trajectory on the whole studied period, as the percentage of SMEs that hired a large number of people decreased: the proportion of SMEs that hired more than 20 persons/year decreased 4 times in 2010/2011 as compared to 2004/2005 and the proportion of SMEs that hired between 11-20 persons decreased 8 times in the same period, in the conditions in which these heavy employing SMEs were few anyhow in comparison with the total number of SMEs. On overall, the proportion of SMEs that hired more than 5 persons/year decreased from 27% in 2004/2005 up to 6% in 2010/2011. It can be concluded that the economic difficulties in Romania are reflected also in the human resource management of SMEs in the last years, as less and less SMEs could afford to hire new people and especially in numerous numbers.

The study of the proportion of employees from SMEs who have graduated higher education on the one hand and who have a large experience in the field of activity on the other hand, took place only starting 2010. For the two years for which the data is available (2010 and 2011), results are similar. Around a quarter of SMEs declared in both years that the vast majority of their employees (75-100%) have higher education studies. If we correlate this with the fields of activity SMEs operate in, it can be noticed that the service sector accounts for the SMEs with the highest percentages of employees who have higher education studies (Fig.2 and 3), and these include SMEs that offer IT services, consultancy services in management, law, etc, civil engineering and others, usually requiring higher education studies.

**Figure 2: Percentage of employees with higher education hired in SMEs in 2010/2011**



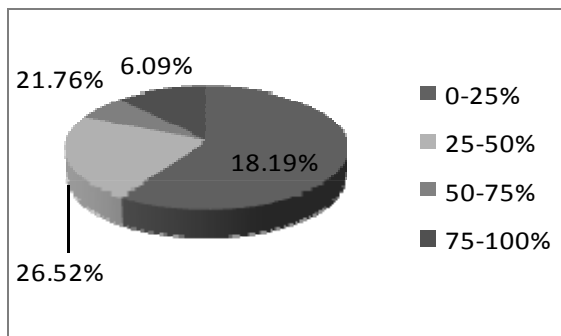
**Figure 3: Average percentage of employees with higher education hired per field of activity of SMEs in 2010/2011**



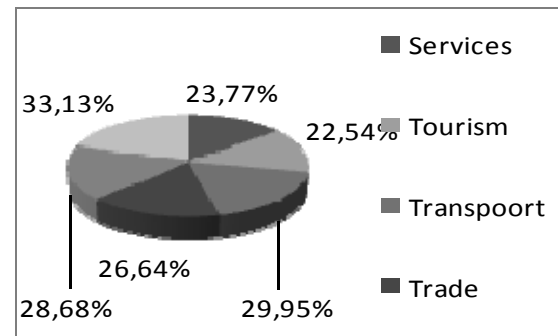
Source: authors' based on CNIPMMR, Carta Albă a IMM-urilor din România (White Charter of SMEs from Romania) 2011

The study of the structure of SMEs employees from the perspective of the experience in the work field revealed that in 2010/2011 around 60% of the SMEs had a low percentage (0-25%) of employees highly experienced with over 15 years of work in the field, while a low percentage of SMEs (11%) had very experienced employees with over 15 years of work in the field. An analysis of the average percentage of employees with over 15 years of experience on fields of activity, illustrates an equilibrated repartition of around 20-25% per field. Domains in which the need of experienced employees is higher seem to be the transport, the construction and the industry. (See Figures 4 and 5.) The more specialized is the work the higher the need of more qualified and experienced work force.

**Figure 4: Percentage of employees with over 15 years work experience hired in SMEs 2010/2011**



**Figure 5: Average percentage of employees with over 15 years work experience hired per field of activity of SMEs in 2010/2011**



Source: authors' based on CNIPMMR, Carta Albă a IMM-urilor din România (White Charter of SMEs from Romania) 2011

One important aspect of HRM relates to the *skills, abilities and competences* and other aspects that are required and looked at, at the selection process of candidates, on the one hand and that are valued when employees are assessed during their work time. According to the surveys' results, the first four aspects considered consistently over time by SMEs, for the selection and evaluation of employees in SMEs are experience (around 60% of SMEs), competence in the field of activity (around 55%), being responsible (around 50%) and knowledge and abilities (around 50%). See Table 4.

Interesting is that there are a number of aspects that are viewed differently or changed their degree of importance for SMEs, since the economic crisis started in 2008. For instance, experience even though one of the important aspects over the whole period, increased in importance after 2008. Similarly, the capacity for effort was an aspect that was appreciated by more SMEs in the last year, illustrating that the decreasing number of employees in the company, actually require larger efforts from the remaining ones. Fidelity towards the firm and team work abilities are aspects seen by an increasing number of SMEs as being desirable.

There are also some aspects that are taken into consideration at a lower extent by SMEs when evaluating employees. The school graduated by the employee is important for a low percentage of SMEs over time (10-15%) and decreasing in the last years (8% in 2010/2011). Similarly, the recommendations employees receive have little importance at selection (with only 6-7% of SMEs in 2007/2008) and decreasing (5% in 2010/2011).

These results are consistent with other studies' results, that found how companies require from and value in their employees, traits such as adaptability, knowledge, ambition, social competence (Woodley and Brennan, 2000; Paul and Murdoch, 2000; Mora et al, 2000). Similarly, Nicolescu (2003) presented the results of a study conducted in Romania in 2000 with companies and illustrated how Romanian employers appreciated in university graduates

aspects such as good theoretical knowledge, seriousness and conscientiousness, openness to new things, adaptability and flexibility, foreign languages and IT skills.

**Table 4: The criteria used by SMEs to evaluate their employees** (% of SMEs)

<b>Criteria for employees evaluation</b>	<b>2005/ 2006</b>	<b>2006/ 2007</b>	<b>2007/ 2008</b>	<b>2008/ 2009</b>	<b>2009/ 2010</b>	<b>2010/ 2011</b>
Experience	66.40	73.77	55.89	57.51	64.24	66.4
<i>Experience – intensity *</i>	<i>4.08</i>	<i>4.06</i>	<i>4.01</i>	<i>2.62</i>	<i>2.80</i>	<i>3.09</i>
Knowledge and abilities	55.10	58.40	46.74	53.69	45.25	54.92
<i>Intensity *</i>	<i>3.58</i>	<i>3.68</i>	<i>3.53</i>	<i>2.11</i>	<i>2.19</i>	<i>2.61</i>
Being responsible	63.80	57.13	54.62	56.87	43.70	47.02
<i>Intensity *</i>	<i>3.15</i>	<i>3.03</i>	<i>2.94</i>	<i>1.77</i>	<i>1.74</i>	<i>1.79</i>
Competence in the field of activity	61	60.53	55.33	48.59	42.02	45.94
<i>Intensity *</i>	<i>3.29</i>	<i>3.13</i>	<i>3.07</i>	<i>1.71</i>	<i>1.75</i>	<i>1.79</i>
The degree of involvement	58.40	49.07	48.73	52.50	38.05	41.61
<i>Intensity *</i>	<i>2.96</i>	<i>2.81</i>	<i>2.59</i>	<i>1.57</i>	<i>1.62</i>	<i>1.63</i>
Conscientiousness	45.80	42.02	43.39	42.13	35.76	40.25
<i>Intensity *</i>	<i>2.55</i>	<i>2.62</i>	<i>2.32</i>	<i>1.43</i>	<i>1.44</i>	<i>1.48</i>
Fidelity towards the firm	-	-	-	-	30.44	34.17
<i>Intensity *</i>	-	-	-	-	<i>1.37</i>	<i>1.41</i>
Capacity for effort	29.40	35.06	31.45	26.57	26.33	31.81
<i>Intensity *</i>	<i>2.40</i>	<i>2.41</i>	<i>1.98</i>	<i>1.33</i>	<i>1.37</i>	<i>1.41</i>
Team work abilities	-	-	-	-	26.60	28.37
<i>Intensity *</i>	-	-	-	-	<i>1.51</i>	<i>1.48</i>
Intelligence	34.80	29.71	30.49	27.48	27.47	24.05
<i>Intensity *</i>	<i>3.2</i>	<i>3.24</i>	<i>2.97</i>	<i>1.9</i>	<i>1.83</i>	<i>1.72</i>
Being respectful	17.40	22.67	18.47	15.38	30.91	21.77
<i>Intensity *</i>	<i>2.16</i>	<i>2.30</i>	<i>1.31</i>	<i>1.25</i>	<i>1.34</i>	<i>1.30</i>
School graduated	17.80	22.75	19.90	16.65	10.03	8.58
<i>Intensity *</i>	<i>3.15</i>	<i>3.10</i>	<i>2.76</i>	<i>1.59</i>	<i>1.75</i>	<i>1.77</i>
IT skills	-	-	-	-	6.06	6.48
<i>Intensity *</i>	-	-	-	-	<i>1.47</i>	<i>1.43</i>
Foreign languages	14.10	11.63	11.23	11.82	12.59	5.97
<i>Intensity *</i>	<i>2.32</i>	<i>2.70</i>	<i>1.79</i>	<i>1.39</i>	<i>1.49</i>	<i>1.57</i>
Recommendations	8.30	4.84	6.61	9.92	6.13	5.29
<i>Intensity *</i>	<i>2.44</i>	<i>2.72</i>	<i>2.06</i>	<i>1.49</i>	<i>1.51</i>	<i>1.70</i>

Sources: CNIPMMR, Carta Albă a IMM-urilor din România (White Charter of SMEs from Romania), Editions 2006, 2007, 2008, 2009, 2010, 2011

\*) Measured on a scale from 1 to 5 for years 2003/2004-2007/2008 and on a scale from 1 to 3 for years 2008/2009 -2010/2011.

Nicolescu and Păun (2009) also presented the results of another study conducted in Romania with employers, study that revealed the importance that companies give to different selection criteria when they recruit their employees: the moral qualities of the candidates have been seen as being the most important aspect (4.56, on a scale from 1 as the least important to 5 as the most important), followed by the professional experience (4.27). The moral qualities wanted by employers questioned in the survey conducted by Nicolescu and Păun, can be assimilated also with traits such as being responsible, fidelity towards the firm and conscientiousness, aspects found in our study as being appreciated by SMEs over the years.

Hernandez-March et. al (2009) looked at the Spanish employers' perspective on the higher education graduates' skills and found as being appreciated aspects such as: the field specific

theoretical and practical knowledge, communication, IT and foreign languages skills, the so called methodological skills (ability to learn, problem solving, ability to work under pressure) and interpersonal skills as team work and willingness to work. That study had findings partially common with the present study, as similar required traits for employees have been emphasized in both, in spite of the fact that one referred only to employees who graduated higher education.

Wages represent one way to motivate employees in a company and the evolution of wages can influence the efficacy of the activity of the company, on one hand as well as its efficiency on the other hand. SMEs have been asked about the evolution of the average wage within the company in terms of increase, stagnation or decrease in certain levels. See table 5. In the period 2003/2004-2008/2009 there was a high percentage of SMEs that declared that they have increased wages at different extents. The highest increase took place in the years 2006-2008, when around of 25-30% of the SMEs declared that the average wage increased by over 15%. This was associated with a period of economic boom, as the real GDP had a positive evolution.

**Table 5: The evolution of the average wage in the SMEs in the last year** (% of SMEs)

<i>Evolution of the average wage in the last year</i>	<i>2003/2004</i>	<i>2004/2005</i>	<i>2005/2006</i>	<i>2006/2007</i>	<i>2007/2008</i>	<i>2008/2009</i>	<i>2009/2010</i>	<i>2010/2011</i>
Remained the same	19.67	20.67	28.13	12.61	14.42	24.66	58.17	54.58
Increased by 0-5%	17.27	34.42	24.57	19.65	14.05	14.24	9.92	11.28
Increased by 5-10%	21.12	20.52	23.43	25.23	21.12	22.69	5.78	7.56
Increased by 10-15%	16.11	10.79	9.93	19.74	21.31	18.37	2.64	3.04
Increased by over 15%	-	-	-	-	-	-	1.36	0.87
Increased by 15-20%	7.98	5.32	8.54	13.62	15.87	11.20	-	-
Increased by over 20%	11.25	6.61	5.40	8.68	12.87	6.48	-	-
Decreased	-	1.67	-	0.46	0.36	2.36	-	-
Decreased by 0-5%	-	-	-	-	-	-	8.07	10.10
Decreased by 5-10%	-	-	-	-	-	-	6.57	6.44
Decreased by 10-15%	-	-	-	-	-	-	3.64	2.66
Decreased by over 15%	-	-	-	-	-	-	3.85	3.47

Sources: CNIPMMR, Carta Albă a IMM-urilor din România (White Charter of SMEs from Romania), Editions 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011

In the studied period, there was an increasing number of SMEs that declared that the average wage remained the same, the percentage over-passing 50% in the years 2009-2010. Starting 2006, there was a small but increasing number of SMEs that declared that they have decreased wages reaching around 20% of the SMEs in 2010/2011. These evolutions of wages were correlated with the evolution of the economy. To be noticed is that in spite of the economic crisis launched in 2008, there were still around 20-25% of the SMEs that declared they have increased yearly wages in different proportions even after 2008.

*Training* activities are seen as important HRM practices in large companies, while for SMEs the general opinion is that they are of less value due to at least two reasons:

- a. the higher labour turnover (Brand and Bax, 2002) case in which they become inefficient and
- b. due to their costly nature (Andersen, 2003) in the conditions in which SMEs are scarce of funds.

**Table 6: The average number of days/employee of training in the last year** (% of SMEs)

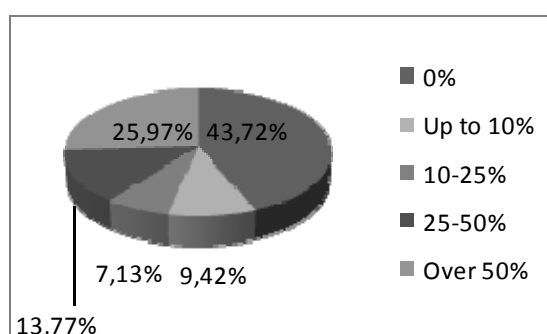
<i>The average number of days/employee of training</i>	<i>2003/2004</i>	<i>2004/2005</i>	<i>2005/2006</i>	<i>2006/2007</i>	<i>2007/2008</i>	<i>2008/2009</i>	<i>2009/2010</i>	<i>2010/2011</i>
None	34	34.17	40.68	34.68	35.04	35.25	60.88	62.52
1-5 days	34	43	41	51.12	44.46	36.61	24.88	23.46
6-10 days	21	-	-	-	11.44	15.87	7.20	7.87
Over 10 days	-	-	-	-	9.06	12.27	7.04	6.16
Over 5 days	-	22.83	18.32	14.20	-	-	-	-

Sources: CNIPMMR, Carta Albă a IMM-urilor din România (White Charter of SMEs from Romania), Editions 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011

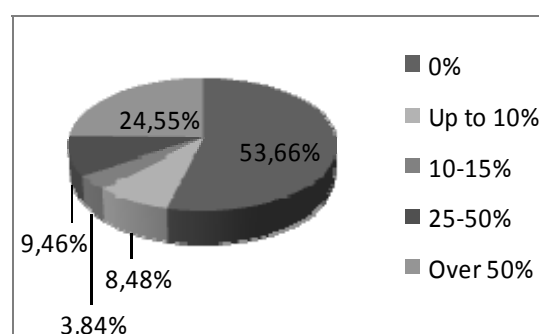
Wong et al. (1997) suggest that SMEs managers/owners find training and development as an expense rather than an investment, and therefore are more sceptical about the benefits of this particular HRM activity. Ways in which the extent of training activities can be measured at company level relate to the average number of days of training per employee and the average number of employees who have been trained. If in 2003/2004, 55% of the SMEs organized training activities with the length between 1-10 days, in 2010/2011 only 36% of the SMEs declared that they have organized training activities, most of them being short training activities (up to 5 days). The trend is towards diminishing the training activities organized by SMEs with the percentage of companies that did not have any day of training almost doubling in 2010/2011 up to 62% as compared to 34% in 2003/2004.

More than half of the studied SMEs declared that they did not involve any employee in training activities in 2010, a percentage that increased by 10% as compared to the 2009 one of 43%. Around a quarter of the SMEs declared in both years 2009/2010 and 2010/2011 that over 50% of their employees have been involved in training activities, illustrating that there is still an interest in these activities in spite of the difficult economic conditions. See figures 6 and 7. Employee development training is a characteristic of innovative companies and especially in case of SMEs, the greater the importance that is placed on company learning and employee training, the higher the level of innovation in SMEs (Laforet and Tann, 2006). They found that more innovative companies empower their employees and provide more training for their managers, than less innovative SMEs do.

**Figure 7: The percentage of SMEs employees who benefited of training in 2009/2010**



**Figure 8: The percentage of SMEs employees who benefited of training in 2010/2011**



Source: authors' based on CNIPMMR, Carta Albă a IMM-urilor din România (White Charter of SMEs from Romania) 2011



## 5. CONCLUSIONS AND DISCUSSION

The analysis that has been conducted made us to draw the following conclusions in relationship with HRM in Romanian SMEs:

- a. This research also confirms that SMEs play an important role as a sector that contributes to an economy's employment, as on a yearly basis Romanian SMEs declared that they had newly employed people, even in times of crisis.
- b. Romanian SMEs used HRM practices, similarly as Dutch SMEs (Brand and Bax, 2002) and their practices can be seen as competitive advantages at company level.
- c. The economic crisis determined changes in the HRM practices of SMEs, most of them having a restraining tendency:
  - c1) new employees hiring diminished, especially when talking about hiring a large number of new employees. On overall, the proportion of SMEs that hired more than 5 persons/year decreased from 27% in 2004/2005 up to 6% in 2010/2011;
  - c2) wages dynamics has known a reverse evolution: declining after 2008 with over 80% of the SMEs keeping the wages the same or decreasing them after the start of the economic crisis, while in 2007/2008, 85% of the SMEs declared that they increased the wages of their employees and
  - c3) training activities declined to a large extent.
- d. SMEs manifested a high degree of responsibility in applying their HRM practices and this was reflected in the fact that in spite of the overall decreasing tendencies determined by the economic crisis, there were still positive evolutions of the HRM activities in a limited number of SMEs: d1) even after 2008, there was a diminishing but existing percentage of SMEs that employed on average over 5 new employees/year (20% in 2008/2009 and down to 5% in 2010/2011); d2) in spite of the economic crisis, even after 2008, there were around 20% of the SMEs that increased the wages of their employees and d3) the training activity is still an important activity in SMEs as in 2010/2011 still around 36% of them declared that they have organized training activities in the previous year. This is different from the situation of Dutch SMEs where a relative lack of training is seen as being specific (Brand and Bax, 2002), but similar to Danish SMEs where "the days of the non existing training in SMEs are for some companies over" (Andersen, 2003). We can conclude that there were changes in the HRM practices after the start of the economic crisis and all were in the restricting direction.

In this context, a few proposals for HRM activities in SMEs in the coming period are:

- a. flexibility of SMEs known as a specific characteristic of SMEs (Brand and Bax, 2002) can be used to a higher extent in period of crisis, by involving employees in strategic decision making. Experienced employees can be very good observers and can be used as a possible source of suggestions and solutions for the enterprises, while new employees can bring new ideas and new thinking into the company, if asked to contribute to strategic thinking.
- b. survival of SMEs in periods of economic difficulties depends on the utilisation of their human capital and as skills is seen as the most important factor contributing to the success of the firm (Ferligoj, Prasnikar and Jordan, 1997), SMEs can try to adopt a flexible approach to labour relations, in terms of income determination and other material and moral incentives, so that to motivate employees on the one hand and to fit into the economic constraints of the present period, on the other hand.
- c. SMEs can take advantage of the crisis period and attract qualified and experienced employees who were made redundant by large companies in times of economic difficulties.

- d. Romanian SMEs should focus on being more innovative, including innovations in their HRM practices. According to the 2010 Innovation Scoreboard, based on 25 Innovation and Research Indicators, Romania was considered a modest innovator (well below that of the EU27 average) together with Bulgaria, Latvia, Lithuania. Innovation helps SMEs to better manage shocks and recover. Innovative companies are more adaptable and flexible, sense the need to change and adopt changes faster.
- e. even though, SMEs do not have the same resources as larger companies in order to focus on fostering relationships with other similar firms and create networks, clusters or think tanks, they should increase their networking activity so that to better communicate and disseminate information amongst them. According to Navickas and Malakauskaitė (2009, p. 255) “Clusters (and similar forms of inter-organizational structures) create the environment for innovation and technological advancement”.
- f. New forms of training can be used by SMEs, such as on-line training. Online courses are a cost and time efficient way of investing in the development of the human capital of the firm. Online courses are usually cheaper than traditional training courses and do not involve any mobility.

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*Monika Szafrńska, Renata Matysik-Pejas*

## 1.5 FINANCIAL LITERACY IN SME BUSINESS ACTIVITY IN POLAND

**Summary:** Globalisation, dynamic development of financial markets and modern financial products caused that SME firms have at their disposal a wide array of financial instruments. New financial services create wider possibilities but at the same time lead to a necessity of upgrading financial knowledge of SME owners or staff responsible for financial management of the enterprise.

The article aims at determining financial literacy of the persons responsible for the realization of financial policy in firms of the SME sector, but also an identification of factors determining and diversifying this level. The main source of data used for the analysis and inference was information elicited through the Author's own investigations conducted in 2011 on a group of 150 enterprises from the SME sector. Summary statistical measures and nonparametric ( $\chi^2$ ) test were used to realize the work objection.

As results from conducted investigations, the level of knowledge and financial skills of SME employees depends on the gender, age and education but also on the period of employment/conducting economic activity. Men, aged under 34 years of age, possessing higher education and employees with the longest employment period revealed a higher level of financial literacy. It has been noticed that firms managed by persons revealing a higher level of financial literacy more often use the innovative financial services, e.g. leasing or factoring.

**Keywords:** financial knowledge, SME, financial services

## 1. INTRODUCTION

Activities of small and medium-sized enterprises (SME) play a crucial role in economic development of each country. 1.6M of entities in SME sector are operating in Poland. These enterprises are characterized by an elasticity and easiness to adjust to market economy and response to market needs. Firms from the SME sector provide jobs for 6.5M people, whereas 7 out of ten working persons are employed in this sector. Considering the number of operating enterprises, Poland occupies sixth position in the European Union (PARP 2011).

Development and strengthening the market position of firms from SME sector is to a great extent possible owing to their use of a wide range of financial services, which makes possible ongoing realization of transactions, increasing investment outlays, better cash management or solving temporary problems with insolvency. A dynamic development of financial markets, modern financial products caused that SME sector has at its disposal a wide variety of financial services. On the one hand, new services create better opportunities, but on the other they make necessary upgrading financial knowledge of the owners or employees responsible for the economic management of the firm.

The objective of the article is to determine financial literacy of persons responsible for the realization of financial policy in the firms of SME sector and identification of the factors determining and diversifying this level.

## 2. MATERIAL AND METHODS

The main source of data used for the analysis and inference was primary information from the Author's own research. A directed interview technique with the use of interview questionnaire was used for the investigations. The studies were conducted in 2011 on a group of 150 entities from the sector of micro, small and medium sized enterprises operating in the

malopolskie region. A vast majority (63%) in the group of the analyzed entities were firms run by natural persons. Every fifth firm is a limited liability company (Ltd). The other enterprises are general or civil law partnerships. Almost 60% of the studied entities have been operating on the market for over 10 years, whereas the other have been present on the market for 5 years (23%) or have been functioning for between 5 and 10 years (20%). In view of employee number, dominant were micro enterprises with average yearly employment under 9 persons.

The interview was conducted with the person who makes financial decisions in the firm (owner/accountant/manager). Almost 51% of the businesses were run by women and slightly over 49% were managed by men. Firms managed by persons under 34 years of age (40%) dominated, whereas the least number of studied enterprises (18% of the entities) were managed by persons over 55 years of age. Every second interviewed person had secondary education and every third a higher education.

Statistical analysis of the studied material comprised:

- structure indicators,
- measures of central tendency,
- chi-square ( $\chi^2$ ) test of independence allowing to assess the significance of association between variables when at least one of them is non measurable.

**Formula 1: Value of ( $\chi^2$ )**

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

$O_{ij}$  – result of measurement in the  $i$ -th line and the  $j$ -th column

$E_{ij}$  – expected value in the  $i$ -th line of the  $j$ -th column

$df$  – degrees of freedom

Testing of all zero hypotheses was conducted at significance level  $\alpha = 0.05$ . In case when the number of observations in contingency table cells was lower than 8, no testing procedure was conducted (Kaczmarczyk, 1997).

### 3. IMPORTANCE OF SMES IN THE ECONOMY

The sector of micro, small and medium sized enterprises plays a significant role in the national economy. The firms counted to this sector are often called the driving force of the economy. These entities constitute a dominating part of the total number of enterprises in market economies of many countries, including Poland. Even though they operate within a small range and have little influence on the environment in which they function, their large number makes the sector crucial for shaping the economy. Businesses, which belong to this sector, have also a considerable share in GDP creating, exports volume and generating new jobs thus counteracting the unemployment (Ganbold 2008).

SME sector fulfils a number of most important economic functions, among others comprising:

- participation in the process of changes in the country industrial structure,
- absorbing and management of considerable labour force resources,
- creating economic infrastructure necessary for efficient functioning of the system,
- playing important role in forming private ownership of factors of production,
- enforcing changes in legal regulations favouring development of entrepreneurship and better effectiveness in functioning of micro and smaller firms (Piasecki 1999).

Sector of micro, small and medium-sized enterprises reveals a dynamic attitude towards the environment and changeable market conditions. Businesses from this sector are characterized by mobility and flexibility, which makes possible their fast reaction to arising needs and customer preferences. They are able for making fast changes in their economic operation profile, are mobile in engaging financial means in different branches and profitable investment endeavours. Businesses from SME sector may create new value for potential purchasers by devoting the necessary time and effort, but at the same time taking into consideration certain level of financial and operational risk. They base on using market opportunities but not on economy of scale. They can easily enter so called market niches, in which they can operate freely, unthreatened by the competition of large firms. Sometimes large enterprises consciously give up their activities on small markets, because for them they are unprofitable. This is an advantageous situation for micro, small and medium-sized enterprises which get involved in niche marketing and advance a more efficient functioning of the whole economy. Businesses from the SMS sector possessing adequate knowledge about the state of the market and state of the competition, immediately adjust to consumer tastes (Bartkowiak, Flejterski, Pluskota 2006).

Frequently firms from this sector become involved in activation of regional and local development through developing of new initiatives. In well-formed market economy this sector fulfils a function complementary to large firms and public sector. It is also a cooperative background supporting the functioning of large corporations.

According to Strużycki (2004) small and medium sized enterprises may gain advantage over big entities, particularly in the situation of:

- quick response to changing environment,
- openness to using innovation which may be more easily verified by market needs,
- easy entering in cooperative arrangements by fast organization of workplaces,
- entrepreneurial use of various chances and market opportunities,
- fast information flows mainly to satisfy definite needs reported by the local market,
- better competitiveness, possible to achieve through a strict control and reduction of costs.

Small and medium-sized businesses played a crucial role in the transformation processes of Polish economy. Quantitative development of these firms helped to alleviate social stresses and reduce high costs of the transformation process. Owing to newly set up businesses from SME sector new jobs were created, which led to reduction of unemployment. They also contributed to changes in the country economy structure through developing new fields of production and new kinds of services. These businesses played also a crucial role in creating private property by taking over and managing a part of equipment previously in possession of privatized large state owned enterprises (Skowronek-Mielczarek 2007).

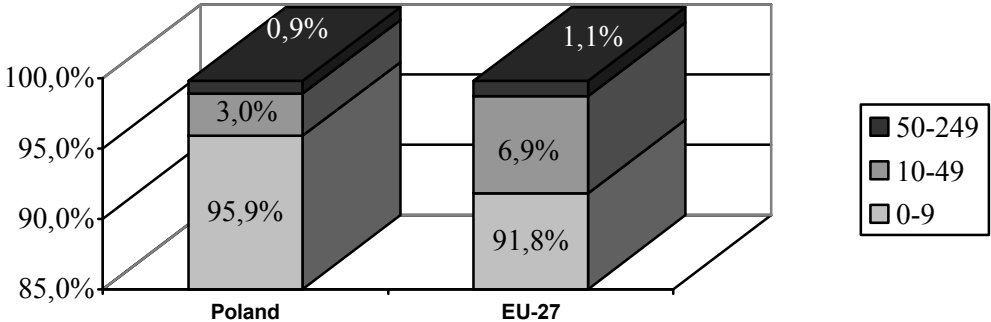
Three phases may be distinguished in the development of small and medium-sized enterprises in Poland. The first phase of the diagram, called initial development of entrepreneurship, had pace still during the centrally planned economy period following the introduction of legal regulations favourable for entrepreneurship. The second stage was explosion of entrepreneurship, which as indicated by the name was characterized by a dynamic development of SME sector. A fast development of entities in this sector and in consequence also employment mainly in trade, construction business and industry was registered in 1989-1994. Demand for commodities and services still unsatisfied at that time determined the trends for SMS development. Such dynamic growth of the number of economic entities resulted from two processes, foundation privatisation and state enterprises privatisation. The next phase was market self-regulation, characterized by a stabilized growth rate of businesses number before 1995. At this stage the number of entities was still growing, but not at such a high rate as in phase two (PARP 2009).

The importance of SME sector in contemporary economic world has been evidenced by the experiences of highly developed countries. They show that economic level of a country is determined by its economy structure dominated by the network of micro, small and medium sized businesses. Just these firms reveal the biggest dynamics in taking up risks and changes, which are features indispensable in today world economy.

**4. SME SECTOR IN POLAND**

Currently micro, small and medium sized enterprises constitute 99.8% of the total number of firms in Poland and fulfil an important function in the economy influencing such crucial aspects as: economic growth, competitiveness, changes in economic structure or unemployment rate. Identical situation as regards the numbers of enterprises is in the EU, where also a vast majority of operating entities are businesses from SME sector (99.8%). However, in Poland SME sector is to a greater extent dominated by micro firms than in the European Union (Figure 1). Their share (96%) in the total number of enterprises outnumbers the European average (91.8%). The share of small enterprises in the number of SME in Poland (2.8%) is over a half lower than the mean for EU (6.9%). Medium-term trends show that the number of micro firms is decreasing gradually, whereas the share of the other groups of entities increases.

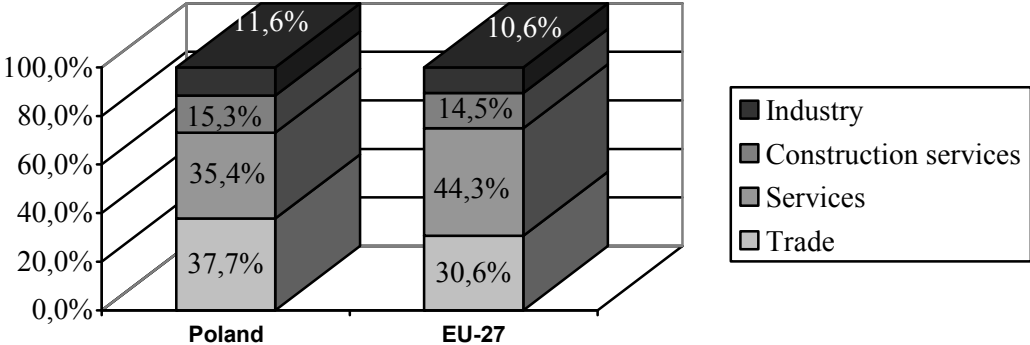
*Figure 1: Structure of active firms from the SME sector in Poland and in the EU-27*



Source: GUS 2010

On the other hand, branch structure of the enterprises is slightly different than in the EU-27 countries. In comparison with an average of the EU countries, Poland is characterized by a larger number of trading businesses. As results from Figure 2, almost 40% of SME operate in trading, whereas almost 36% in services.

*Figure 2: SME structure in Poland and in the EU-27 according to the basic area of activity*



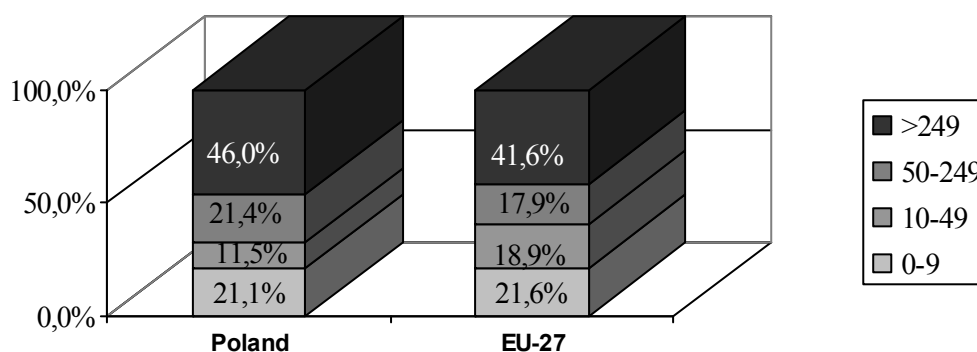
Source: GUS 2010



The same structure in the EU shows respectively 30.6% trading and almost 45% services. In Poland, every seventh enterprise offers construction services and every tenth operates in industry. Presented data confirm a relatively lower level of Polish economy development in comparison with economies of highly developed countries. However, it should be emphasized that slowly occurring changes make the branch structure of Polish businesses similar to the structure of enterprises in the EU.

According to the Central Statistical Office data, enterprises from the SME sector operating in Poland generate almost a half of Polish GDP (48.4%), whereas the smallest firms almost one third (30.4%). The share of medium sized entities is thrice smaller (10.1%) than micro firms, while the share of small ones, almost four times lower (7.9%). The Eurostat data point to significantly lower than in the EU level of development of small businesses measured by this sector share in gross value added generated in enterprises. In Poland, the sector generates 11.5% of gross added value of enterprises, whereas in the EU-27 this share is 18.9%. A noticeably bigger share in creating gross value added in Poland than in the EU-27 characterises medium sized and big entities (Figure 3).

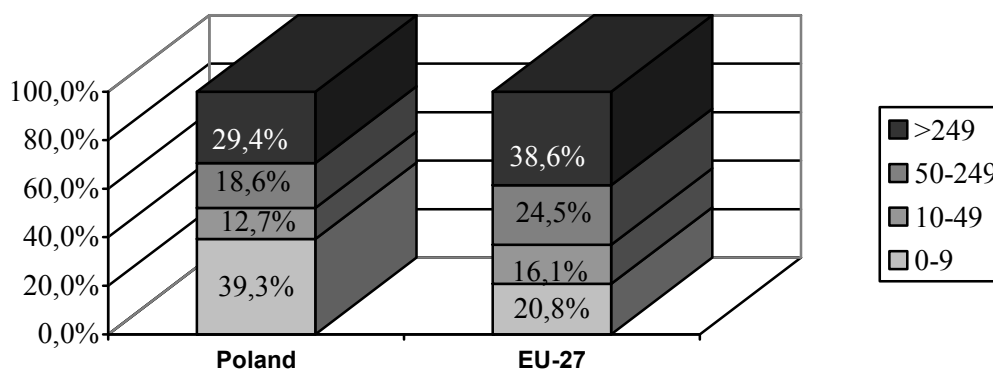
**Figure 3: Structure of generating gross value added in enterprises sector according to size of businesses in Poland and in the EU-27**



Source: GUS 2010

The proportion of persons working in SME sector in the total number of persons working in enterprises in Poland slightly exceeds 70% and is by 9.2% higher than the average for the EU-27 (Figure 4). Almost 40% of the employed are working in microfirms (EU-30%). The share of small businesses in the employed person's structure is 11.6%. On the other hand, medium sized businesses gave a job to every fifth employed person.

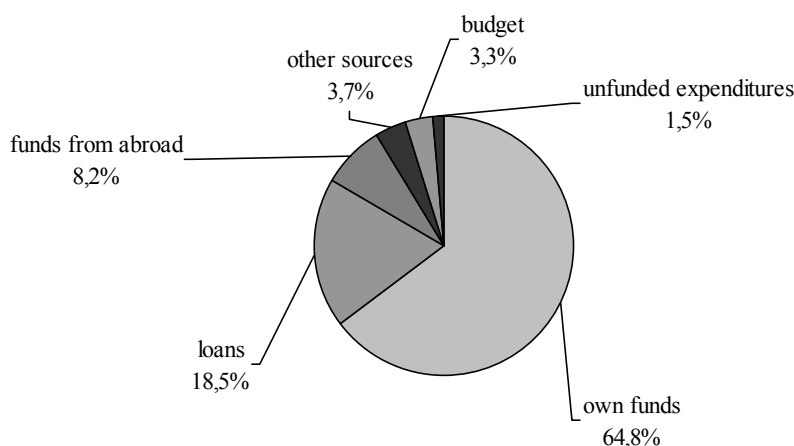
**Figure 4: Structure of the number of people working in enterprises in Poland and in the EU-27**



Source: GUS 2010

General picture of SME activities financing may be assessed why analysing the ways of investment outlays financing. As results from Figure 5, two thirds of SME investment outlays are financed from their own means (64.8%).

**Figure 5: Sources of financing investment outlays in 2009 in SME sector in Poland**



Source: GUS 2010

The bigger the enterprises, the greater engagement of their own means in investment financing (small businesses – 61.7%; medium-66.3% and large -70.1%), determined by the economic potential. Bank credit is the most popular among the outer sources of financing (18.5%). Medium businesses use budgetary means to the highest degree (3.5%), which evidences that public assistance for business development inadequately takes into account the specific character of small firms. It should be emphasized that the structure of SME financing is gradually undergoing transformations. During the 2006-2009 period the importance of SMEs own means in financing investments was growing slightly (growth of the share of this source of financing from 63.4% to 64.8%), the same applied to budgetary means (increase from 1.9% to 3.3%) and foreign means (from 7.5% to 8.2%), whereas the proportion of credits and national loans decreased from 21.8% to 18.5%.

## 5. FINANCIAL LITERACY AND EDUCATION

Crisis on world financial markets made many people aware that lack of knowledge about rules governing the financial world may prove most harmful. It applies both to households and to enterprises operating on the market. Research conducted so far revealed that the level of financial awareness of the communities remains inadequate. As results from the studies conducted by ING group in 2010 on a sample of 10 countries (including five European ones), almost 2/3 of the investigated population possessed only basic knowledge about finances. Persons from Asian countries revealed the highest level of financial awareness. A comparison of collective results was presented in Table 1.

In the literature of the subject, financial literacy is defined as an ability to analyse, manage and communicate in the area of finances (NALA 2005). On the other hand, according to “Development of Strategy Options for SME Financial Literacy” prepared by USAID (2009) a financially literate SME owner/manager is defined as someone who knows which are the most suitable financing and financial management options for his/her business at various growth stages of their business, knows where to obtain the most suitable products and services and interacts with confidence with the suppliers of these products and services. On the other hand, in the opinion of Wołowiec (2011), financial literacy is defined as the skill to obtain and possess information and use it in practice of the enterprise finances management.

Entrepreneurs', managers or employees' lack of comprehensive knowledge about finances diminishes not only efficiency but also safety of firm's operation on the market, therefore determining the level of knowledge and competences of persons who make financial decisions in enterprises is important.

*Table 1: Level of financial awareness of societies in selected countries*

Specification	Level of financial awareness		
	Low	Medium	High
Belgium	72%	23%	5%
Spain	75%	22%	3%
Netherlands	64%	29%	7%
India	61%	26%	13%
Japan	56%	36%	8%
South Korea	63%	26%	11%
Mexico	81%	16%	3%
Poland	73%	23%	4%
Romania	77%	20%	3%
USA	67%	26%	7%
Total	69%	25%	6%

Source: ING International Consumer Resourcefulness. Summary of global results (2011)

Low level of financial literacy of the owners/employees of firms from SME sector may be the cause of financial exclusion. Financial exclusion denotes a lack of access to or non using financial services by an enterprise. The term was first used by Leyshon and Thrift. According to Kempson and Whyley there are six kinds of financial exclusion (FSA 2000):

- geographical access which is connected with physical accessibility of bank agencies in certain regions (e.g. more difficult access to financial institutions in rural areas),
- access exclusion is associated with a lack of access to financial services due to the scale of risk established by a financial institution,
- condition exclusion results from unmatching the terms and conditions for provision of services to needs of entities using financial services,
- price exclusion, which is caused by too high price for financial services (e.g. bank guarantees or insurance services),
- marketing exclusion is connected with a lack of interest in a given customer segment on the side of a financial institution,
- self-exclusion results from the fact that a part of entrepreneurs themselves resign from financial services because they are sure they will be refused the access to them.

As results from the "SMEs' Access to Finance survey 2011" (2011), in case of bank loan as much as 13% of entrepreneurs in Ireland do not apply for a loan because of a possible denial on the part of a financial institution. Average for the European Union is lower and reaches 6%. On the other hand, in Poland the share of firms from SME sector who face this kind of exclusion is one of the lowest in Europe, i.e. about 3%.

In recent years, a gradually increasing interest of banks in providing service for SME businesses has been observed in Poland. These entities are characterized by a lower power of capital and lesser stability than large entities; however, their undoubted advantage is in numbers. As has been mentioned before, microenterprises, small and medium sized businesses constitute over 99.8% of all enterprises in Poland. In this context, these businesses are an attractive segment for financial institutions.

Currently the product destined for SMEs and generating the largest portion of bank incomes are credit products (c.a. 35-40% of bank incomes). Bank derives c.a. 30% of incomes from clearing services and c.a. 25% from deposit and investment products. The product characterized by the highest profitability for banks and the lowest risk are short-term credits (below one year). High potential of short-term credit sales is connected with increased demand of enterprises for working capital for their economic activity. Moreover, it results from limiting long-term financing by banks. In the opinion of banks, in subsequent years the importance of clearing services will increase. Banks will focus on increasing their incomes connected with domestic and foreign settlements (Litkiewicz 2009).

One of the most efficient ways of improving financial literacy of business owners/employees are various activities in the area of financial education. According to Wołowicz (2011), financial education in a firm are wide ranging activities aimed at implementation of knowledge but also positive habits among employees leading to making proper decisions concerning finance management in compliance with current and future needs of the firm.

The basic instrument of strengthening financial literacy is a process of continuing training and education of employees. Employees' financial literacy in many businesses of SME sector is upgraded owing to the courses taught by external consulting companies. Financial consulting and training focus both on the ways of raising capital and investing free cash.

In Poland, a considerable part of initiatives aiming at increasing financial awareness in entrepreneurs/small and medium sized businesses employees is also realized by financial institutions, which beside actions promoting environmental protection, culture and sport or charitable actions undertaken in the framework of corporate social responsibility, also make endeavours aimed at financial education of the society.

As results from research conducted by Kitala, Matuszyk and Nowak (2011), these activities are largely realized using various tools accessible on banks' websites. The examples may be credit and interest calculators, FAQ forums, on-line expert advice, knowledge platforms, courses and training via Internet, and glossaries of finance and banking terms or links to other websites where one can find information helping to upgrade the knowledge and skills in the area of basic finances.

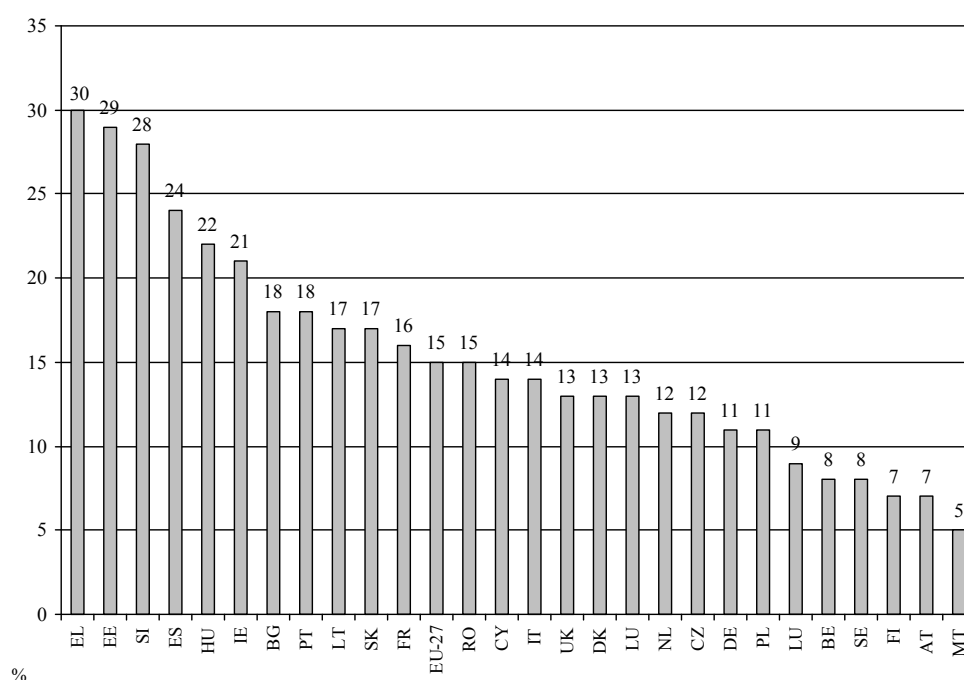
A similar source of financial knowledge is Internet financial portals, which are also involved in activities focused on financial education. The thematic range of the portals is diversified. Three groups of financial portals have been distinguished due to the profile of educational activities recipients.

Group 1 comprises portals, which contain practical information for a potential customer on financial market. He can check which services are currently available on the market and then choose the most convenient option. These website search engines usually contain tools helpful for the user, such as tools for comparing financial products, financial calculators or glossaries of terms.

Group 2 is formed of portals, which play the role of electronic financial newspapers. Information they contain are news from the world of finances focussed usually on financial markets. Useful for entrepreneurs/managers seeking information about changes occurring in the areas of their interest.

Group 3 is composed of portals created for entrepreneurs who conduct (or plant to start soon) their own businesses. The information which may be found on these portals concerns legal regulations in specific sectors of the economy, changes which accompany them and outcomes for the businessmen. The expert advice in various areas, which can be also found here is designed for persons who possess certain level of financial literacy.

**Figure 6: Access to finance in 2011 (all SMEs % by country)**



Source: SMEs' Access to Finance Survey 2011, Analytical Report (2011)

These initiatives are very useful and needed, but they target mainly financial entrepreneurs/managers who are willing and able to use Internet resources. Financial institutions also conduct training activities in the framework of CSR and the offered courses are adjusted to the needs and requirements of beneficiaries in this respect.

Conducted educational activities successfully contribute to increase in the level of financial inclusion phenomenon. Sarma (2008) defines financial inclusion as a process, which ensures the access to, but also free use of the financial system for all participants in the economy. Roland, Bays and Chaia (2011) define financial inclusion as enabling each citizen participation in a formal financial system. On the other hand, as suggested by Ganbold (2008), financial inclusion, or broad access to financial services is defined as an absence of price and non-price barriers in the use of financial services. Improving access, then, means improving the degree to which financial services are available to all at a fair price. Studies conducted by Ipsos MORI (SMEs' Access to Finance 2011) revealed that 15% of enterprises from SME sector in the EU pointed that the access to financing is one of basic problems, besides finding customers, which the owner/manager faces. As results from Figure 6, Greeks (30%) and Estonians (29%) most frequently indicated a lack of access to financing. The average for the EU is 15%, whereas for Poland the share is slightly lower reaching 11%.

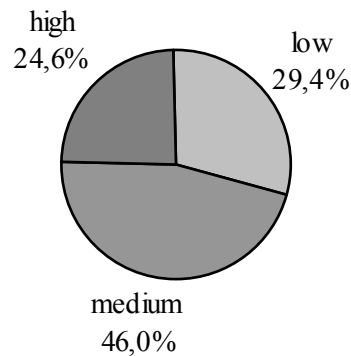
Bearing in mind a necessity to strengthen financial literacy of the owners and employees of enterprises from SME sector, one should in the first place identify the level of financial literacy.

## **6. THE STATE OF FINANCIAL LITERACY OF PERSONS MAKING FINANCIAL DECISIONS IN SMES**

A measurement and assessment of financial knowledge were conducted using financial literacy index. A source of information used for its construction was a test on basic definitions and financial instruments used in a SME enterprise operations. Construction of the index was based on principles of construction of financial literacy index according to Guiso and Japelli

with Monticione's (Calgano, Monticione 2011) correction. Correct answers to questions were added and then rescaled to the range from 0 to 100. Mean value of the financial literacy index for the studied population was 52 points, whereas the maximum result – 74 points of 100 possible. The studied persons most frequently obtained 46 points (15%).

**Figure 7: Level of respondents' financial literacy**



Source: Author's own studies

In order to verify the obtained results by means of ( $\chi^2$ )test, they were grouped in three intervals: low, medium and high level of financial literacy (Figure 7). As results from the conducted analysis, 46% of persons participating in the studies revealed a medium level of financial literacy. Almost every third respondent represented low, whereas every fourth respondent a high level of knowledge on finances.

The level of financial literacy depends on respondent's gender. Men revealed a higher level of knowledge about finances. In this respondent group, every third person represented a high level of knowledge and every second a medium level. Similar results were obtained also in research conducted in Australia. Financial Literacy Score for males reached the level of 87.5, whereas the same value for females was 81.8 (ANZ Survey of Adult Financial Literacy in Australia 2008).

The factor determining the level of financial literacy is age. The share of persons in the studied population who obtained the best results of the test has been diminishing with increasing age of the respondents. The highest level of qualifications in the sphere of finances characterizes persons under 34 years of age (almost 34% of respondents reveal a high level of knowledge) and those aged between 35 and 44 years (30.3%).

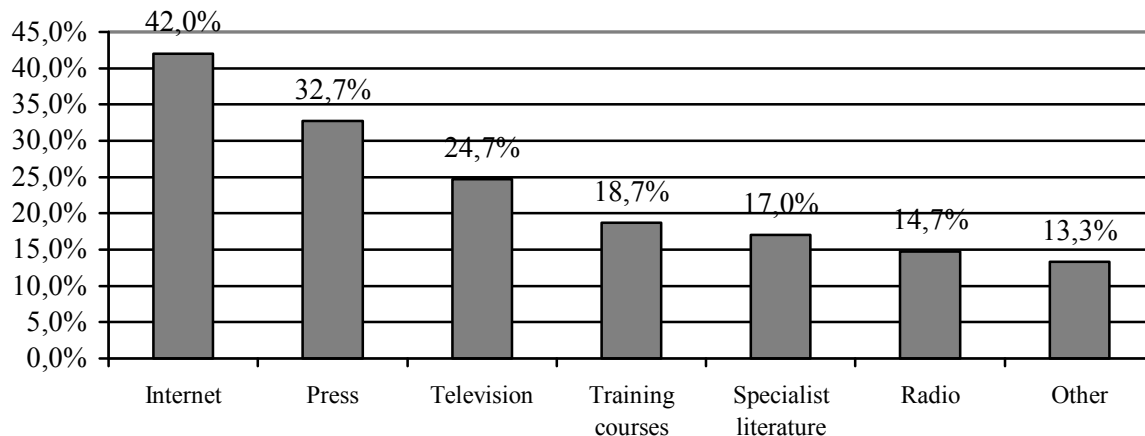
The level of competence in the area of finances depends also on education. As results from the data, every third person from the respondent group possessing vocational education reveals a low level of financial knowledge. In the group of persons possessing secondary education, only every fourth person has low qualifications in the area of finances, whereas among the best educated persons, the group makes up only about 20%.

The next determinant of financial literacy is the period of running the firm (in case of owners) or employment period (employees responsible for making financial decisions). The study results indicate that with prolonging period of employment the level of entrepreneurs' or employees' financial competences rises. Every second respondent in the group of persons with the shortest employment period is characterized by a high level of financial knowledge, whereas among the entrepreneurs/employees with a long employment period, 2/3 of them possess the highest level of knowledge on finances.

Improving financial knowledge and developing positive habits among entrepreneurs or employees of small and medium-sized enterprises is facilitated by diverse measures in the framework of financial education. Despite an average level of financial literacy in the discussed respondent group, only every third investigated person is interested in upgrading his financial knowledge. These are mainly the youngest persons ( $\chi^2 = 29.0$ ,  $df=6$ ), equally women

and men, respondents with higher education (44.9%), persons characterized by the lowest and highest level of financial literacy. The need to upgrade knowledge in these two groups is probably due to other reasons. The persons who obtained a poorer result in the test are aware of a lack of knowledge necessary for running business and application of modern financial instruments. On the other hand, respondents who reveal a high level of financial knowledge feel the need for more advanced knowledge in order to use complicated financial services. Almost 40% of people were not interested in improving their knowledge, whereas every third respondent had no opinion on the matter.

**Figure 8: Sources of financial knowledge preferred by respondents**



Source: Author's own studies, multiple choice, n=150, 245 indications

Financial knowledge may be acquired from many different sources (Figure 8). Internet (42%), press (32.7%) and television (24.7%) were indicated as the basic sources of financial knowledge in the group of investigated respondents. Internet was the most frequently indicated by the youngest persons (62.7% of respondents under 34 years of age), persons with secondary and higher education (47.4% of the above-mentioned groups,  $\chi^2 = 18.3$ ,  $df = 3$ ), equally females and males. On the other hand, press was the most important for males, the youngest persons and investigated persons with secondary education. Television was most frequently chosen by persons aged between 45-54, respondents possessing secondary education and men ( $\chi^2 = 9.8$ ,  $df = 1$ ). High importance of television as a source of acquisition of financial knowledge results from its universal access. An important way to acquire financial knowledge was also participation in special courses/trainings (almost 19% of indications). Approximately 17% of the respondents marked specialist literature and 15% radio.

Skilfully applied financial knowledge allows to choose appropriate financial instruments. As results from conducted analysis the level of financial literacy of a firm owner determines its financial activity on the market (measured by the number of financial instruments which the enterprise uses). It was noticed that the higher level of competences in the sphere of finances presented by the entrepreneur, the more frequent the use of various financial instruments in the enterprise he manages.

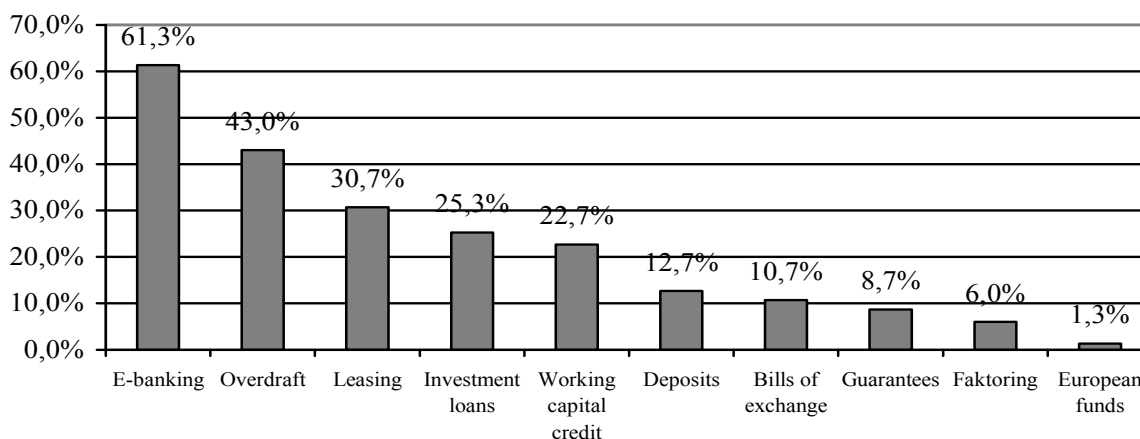
Apart from a bank account, compulsory for enterprises, a key category of services for economic entities are credits, which make possible increasing the production, employment or introduction of innovations. Almost 55% of the studied enterprises were repaying a credit/or credits in 2011. The results are convergent with the results presented in the Report "SMEs' Access to Finance" (2011) which show that on average, every second enterprise in UE were repaying a credit/credits in the analyzed period (e.g. HU - 49%, SK - 55%). Almost 53% of the persons characterized by a low level of financial literacy were using credits, almost 50%

of the studied persons, whose financial knowledge was estimated on a medium level and nearly 70% of the respondents characterized by a high level of financial literacy. The most popular form was an overdraft used by 43% of the studied enterprises (in UE - 40%) (SMEs' Access to Finance, 2011). Results of statistical analysis indicate that the fact of setting up an overdraft does not depend on the level of enterprise owners' financial literacy ( $\chi = 3.1, df = 2$ ).

On the other hand the investigations have demonstrated that using investment credit is conditioned by the level of financial knowledge of the person responsible for financial management in the firm ( $\chi^2 = 6.3, df = 2$ ). Every fourth of the investigated enterprises use investment credit. A higher inclination to take out this type of credit was noticed in the enterprises group managed by persons revealing a high level of financial literacy (almost 38% of entities). In the group of firms managed by persons characterised by a low level of qualifications, nearly 14% of the entities were repaying the investment credit.

Another banking service targeting the SME sector customers is working capital credit. Nearly 23% of the studied entities were using this financial product (Figure 9).

**Figure 9: Financial instruments used in studied enterprises**



Source: Author's own studies

We have also noticed in our research that persons characterized by a higher level of financial literacy more frequently, as compared with the other groups, use innovative financial instruments. These services comprise alternative sources of finance. Every third entity in the analysed enterprise group used leasing service. Leasing is a particular way of financing economic activity, enabling an enterprise to use tangible current assets without a necessity of their purchasing (Bień 2008). The conducted studies have shown that almost 40% of persons revealing the highest level of financial literacy were using leasing. For comparison, only 29% in the group with low level of knowledge.

Factoring is another alternative service accompanying credit, which involves buying of accounts receivable (Rutkowski 2003). 6% of the respondents in the discussed group were using it in 2011. In this case, also a higher demand for factoring was observed in a group of persons characterized by a high level of financial knowledge. Nearly 11% of firms managed by persons who obtained the best result of test were using factoring, whereas in the group of persons revealing a low level of knowledge, factoring was used by slightly over 4% of entities.

In the analysed group of firms, only two were using European funds. It may evidence a poor knowledge on the discussed services and low level of practical financial skills of persons responsible for financial decision in the investigated enterprises. Firms managed by persons revealing a high level of knowledge were using the EU grants.



A group of innovative services for SME sector comprises also e-banking, used by 2/3 of the investigated enterprises. Popularity of this service results from its characteristics, such as 24-hour access to banking services, time saving and cost limiting (Korenik 2006). As results from the conducted analysis, the share of entities using this service was growing with increasing level of financial literacy of enterprises' owners. In case of persons characterized by the lower level of financial knowledge, about 55% of them were using e-banking, whereas in the group of persons representing a high share, over 70% entities were using services in the electronic environment.

Among other financial products used by the investigated enterprises, one should mention various deposits used by almost 13% of the firms. Bills of exchange (10.7%) and bank guarantees (8.7%) were most used as credit collateral.

## **7. CONCLUSIONS**

In conditions of dynamic development of financial markets, complicated financial products and modern distribution channels, great skills of enterprise employees in the area of financial knowledge make possible active and rational use of diverse financial instruments, better planning for the future, improvement of the enterprise liquidity or mitigation of risk.

Presented investigations made possible determining the level of financial literacy of persons responsible for financial management in firms of SME sector. On the basis of obtained results it may be stated that the respondents revealed an average level of financial knowledge. Males, higher educated persons, aged under 34 feel best in the world of finance. The least prepared to use the potential offered by financial market to the enterprises in the SME sector are women, persons with vocational education and persons over 45 years of age.

Financial literacy is a crucial factor of functioning and development of enterprises in the SME sector, which in conditions of changes on financial markets requires constant upgrading and updating. Despite an average level of financial literacy and skills, only one in three respondents was interested in improving knowledge about finances.

Planned educational measures targeting beneficiaries from the SME sector should consider an appropriate selection of financial knowledge distribution channels. As results from the studies, the most efficient distribution channels will be Internet, press and television programmes. An important link is also specialist courses and trainings which should be adjusted to the needs and requirements of SMEs in this respect.

The level of financial literacy also determines enterprise activity of the financial market. In the enterprises whose owners or employees responsible for financial management were characterized by a slightly higher level of qualifications in the area of finances, diverse financial instruments were more often used. Analysis of the array of financial services used by the enterprises shows a wide popularity of e-banking. Results of the studies revealed also that SME sector is to a considerably higher degree interested in services financing its activity than in deposit services. Credit was used by almost 55% of the studied enterprises, leasing by something more than 30%, whereas only 13% of the entities had deposits.

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*János Fehér, Péter Kollár*

## 1.6 TRANSFORMATIONAL LEADERSHIP: CONCEPTS AND CULTURAL TRANSFER PROBLEMS

**Summary:** Transformational Leadership is a representative trend of the New Leadership conception. It puts leaders' own development, values, shared goals, mutually agreed performance criteria, special emotional-symbolic-charismatic effects, and empowerment into the focus of the influence process. It aims at the development of followers, as well as the raising of their level of aspiration and commitment, in order to bring about necessary changes in the organization. On the basis of relevant literature it can be concluded that this trend has not become sufficiently part of the Hungarian academic thinking yet – no matter how important the contribution of some institutions, e. g. that of the Szent István University have been to the generic field of Leadership. Therefore, our research has targeted an adequate conceptual analysis of some of the emerging theoretical problems and introduces preliminary results about the presence of Transformational Leadership at certain Hungarian organizations.

**Keywords:** New Leadership, Transformational Leadership, leadership development, Leadership Practices Inventory

### 1. INTRODUCTION

Transformational Leadership is a representative trend of the New Leadership conception coming after the Trait, Behavioural and Situational/Contingency theories in the evolution of leadership thought. These historical approaches have put the leader-follower dyad into focus, and laid an emphasis on small group effects. They have targeted the issue of influencing people for goal achievements but let some critical questions unanswered especially about the role and methodology of large-scale transformations. Nevertheless, the following trends have become evident by the late twentieth century:

- a) a recognition of an urging need for catalyzing and implementing organizational level change by the leader, and, also, by informal leadership, at all levels;
- b) a recognition of the use of heroic, powerful, charismatic, visionary – best generalized as transformational – style-elements in leadership (Buchanan, Huczynski, 2004, p. 741); and,
- c) a recognition of the need of investing into people through training & development, delegating, and empowerment (Mullins, 2007, p. 516; Yukl 2010, p. 133).

Transformational Leadership (TL) as a representative concept addressing the aforementioned leadership challenges encompasses multiple theoretical and pragmatic approaches with various scopes of analysis (Northouse, 2012 /edition 2013/, p. 186, p. 199). In an attempt to synthesize the definitions of several authors we can say that it refers to the use of a broad range of (i.e. non-conventional) means of influence in the leadership process with an aim to develop followers in order to bring about necessary changes in organizations (Fehér, 2010, p. 13). To its toolkit belong i. a. the practice of the leaders' self-development, shared values and goals, mutually agreed performance criteria, special emotional-symbolic-charismatic effects, and empowerment. The development of the followers targeted by TL includes i. a. a raise of their level of aspiration and commitment (op. cit. p. 185; Avolio, Bass 2002, p. 1; Yukl 2010, p. 277)

In setting of the goals of this paper we have been influenced by the fact that specifically the topic of TL has not become sufficiently part of the Hungarian academic thinking yet – no

matter how important the contribution of some institutions, e. g. that of the Department of Management and Organization of the Budapest Corvinus University, and the departments concerned at the Szent István University have been in the generic field of Leadership. With regard to this in this paper we offer first an overview of the TL theory along relevant dimensions and deal with some considerations about the transferability of its concepts to the Hungarian culture.

## **2. THE EVOLUTION AND CONCEPTS OF TRANSFORMATIONAL LEADERSHIP**

### **2.1. THE CHARACTERISTICS OF THE SOCIO-ECONOMIC ENVIRONMENT DURING THE DEVELOPMENT OF TRANSFORMATIONAL LEADERSHIP**

With the changing of the competition and labour market conditions and with the rise in value of the role of corporate human resources, several issues of human resource management gained increased importance during the 80s and especially by the turn of the 80s and 90s. (Fehér, 2009a)

Change tendencies started and were strengthening in each ‘STEP’/‘STEEPLE’ dimensions. The process of internationalization and globalization was highly impacted by the permanent information technology revolution, and the decline of the world communist political system. Both deregulation and stricter conditions of law application have appeared in the legal environment. There was a gaining ground of the service economy with an inevitable assertion of new quality expectations. The value systems and lifestyle of employees have changed. A multiplication of economic and ethical dilemmas related to environment and public interest could be observed simultaneously. As a result we stepped into a period of endemic changes when the aforementioned contextual factors created an endless chain of quick organizational transformations, and the human resource consequences of these, the often large-scale and dramatic ruining of existences and carriers, or the opening of extensive opportunities. (e. g. Schermerhorn et al, 1994, 36-43 pp, Dessler, 2000, 9-13 pp; see also Fehér, 2009a, 277 p)

Endemic change meant that the nature of the change itself changed. This period, unlike earlier ones, saw the changes brought about by the different motive forces appear enduring and/or in quick succession; often combined, in large numbers, controversially.

Given the complexity and dynamism of the developing scene of change in the period, we may well assume that transformational leadership functions and the performers of these functions did play a vital role. For the subsequent observer it may seem that the appearance of transformational leadership was in fact inevitable in this turbulent, complex environment. (Fehér, 2009a, in an interpretation of Kanter et al, 1992, 14-17, 372 pp)

The mentioned contextual and intra-organizational change tendencies caused significant rearrangement not only at the upper, but also at the lower and micro levels of leadership. The goals and the meaning of the organizational and workplace performance changed as well. We could observe a new approach to, and interpretation of performance in relation with tendencies like:

- a spread of non-routine activities and processes,
- the increase of the role of indirect performance factors besides special competences,
- the integration of individual competences into “organizational competences” – (Ulrich, 1997, 54-65 pp)

In order to gain more and new contributions from the employees it is not surprising that employee commitment had to be strengthened in the mentioned period. Though the feeling for commitment underwent deep frustrations (for example, due to redundancies, or constraints of

seemingly arbitrary changes), employers' expectations understandably focused around developing personal dedication in the above-mentioned ever changing external and internal organizational environment. There was a shift in the interpretation of commitment simultaneously, with commitment-related self-sacrifice, for example extra effort or risk-taking of a higher level getting more emphasis. (e. g. Dessler, 1994, 18-19 pp, Schermerhorn et al, 1994, 5 p; see also Fehér, 2009a) All these factors show how important the role of value-awareness for leaders became.

According to the above, the leaders of the given period were confronted with a need to understand and influence/manage:

- the context of the 're-defined employee performance',
- the changing values (with a newly interpreted commitment, and other values underlying generic competences),
- the relation between individual and collective values (with a need for strengthening basic values that were considered typical individually and collectively), and,
- a new leadership toolkit offering a wide range of dramatic-emotional-symbolic elements.

In summary we can suggest that "transformational leadership, more exactly the mature conception and practice of it were made necessary and helped develop by the mentioned external environmental and organizational challenges. In this complex environment, a leadership tendency that put understanding the new complexity and the new values in the centre, and that tried to give a modern leadership answer to the problems of handling complexity and mediating values with new, emotional and symbolic influencing means, was essential". (Fehér, 2009a, 278)

## **2.2. THE EVOLUTION AND CONCEPTS OF TRANSFORMATIONAL LEADERSHIP**

Though the term "transformational leadership" originally comes from Downton (1973, see Northouse, 2001, 132 p) it is Burns' "transforming leadership" concept that is considered to be the forerunner of transformational leadership. Transformation is "the process in which leaders and followers raise one another to higher levels of morality and motivation". (Burns, 1978, 20 p) We have to note that the phenomenon of "transformational leadership" was made widely known by Bass. (Bass, 1985) Bass defines transformational leadership in terms of the leader's effect on followers: they feel trust, admiration, loyalty and respect toward the leader, and they are motivated to do more than they originally expected to do.

An important step in the history of the TL concept was when Bennis and Nanus introduced their thoughts as "A new leadership theory". This name later has got a wider meaning. (Bennis, Nanus, 1985) The authors think of leadership as a potential to turn vision into reality, and to use power in a wise way. (Bennis, Nanus, 1996, 25-26 pp) Another major phase in the development of transformational leadership was the research by Tichy and DeVanna (Tichy, DeVanna, 1990) who studied the behaviour of chief executive officers during change. Their research suggested that CEOs view changes in three "stages": recognising the need for change, creating a new vision, and institutionalizing the changes. In the interpretation of Tichy and DeVanna, at each stage of the transformational process, success will depend on the leader's attitudes, values, and skills.

Kouzes and Posner are emblematic authors of today's leadership theory. Their first book on the challenges of leadership was published in 1987. Their research found four basic characteristics (integrity, competence, vision, enthusiasm), and, also five fundamental leadership practices (challenging the process, inspiring a shared vision, enabling others to act, modeling the way, encouraging the heart) which were typical of effective and admired

leaders. (Kouzes, Posner, 1987, Kouzes, Posner 1995, 18 p) They define leadership as the “art of mobilizing others to want to struggle for shared aspirations”. (Kouzes, Posner, 1995, 30 p)

The aforementioned mainstream TL authors like Burns, Bass, Tichy and Devanna, Bennis and Nanus, Kouzes and Posner represent more or less different approaches to transformational leadership. In Yukl’s interpretation “transformational leadership refers to the process of building commitment to the organizations’ objectives and empowering the followers to accomplish these objectives.” (Yukl, 1998, 324.) In a more recent publication Lussier and Achua note: “transformational leaders are known for moving and changing things ‘in a big way’, by communicating to followers a special vision of the future, tapping into followers’ higher ideals and motives.” (Lussier, Achua, 2007, 319 p) Gibson et al. define transformational leadership as the “ability to inspire and motivate followers to achieve results greater than originally planned for internal rewards.” As regards the organizational context they suggest that “transformational leaders...make major changes in the firm’s or units’ mission, way of doing business, and human resource management to achieve their vision.” (Gibson et al, 2009, 354)

Quoting Northouse we can say that “...transformational leadership is a process that changes and transforms individuals. It is concerned with values, ethics, standards, and long term goals. Transformational leadership involves assessing followers’ motives, satisfying their needs, and treating them as full human beings.” We would especially emphasize the authors’ following note: “Transformational leadership ... can be used to describe a wide range of leadership, from very specific attempts to influence followers on a one-to-one level to very broad attempts to influence organizations and even entire cultures.” (Northouse, 2001, 136)

As authors suggest within the mentioned different approaches we can still identify certain coherence. One of these conceptual cornerstones is a need for displacing the transactional leadership approach. Whereas “transactional leadership directs the efforts of others through tasks, rewards and structures, transformational leadership is inspirational, and arouses extraordinary effort and performance.” (see for example: Schermerhorn, 2008, 333 p) Thus it can be said that there is a need for a *leader* (instead of a *manager* in a traditional sense) who shows values, expresses confidence, leads by example, and who acts according to the following: vision, confidence, dramatic, symbolic actions, early successes and their celebrations, rewards. (Fehér, 2009a, 281)

Summarizing the role of transformational leadership, it can be said that this tendency by now has occupied its place among the basic organizational leadership theories, and it is one of the most accepted of the competing explaining concepts. (Yukl, 1998, 327-328, 340 pp, Northouse, 2001, 145-148 pp, Buchanan, Huczynski, 2004., Lussier, Achua, 2007., Schermerhorn, 2008., Gibson et al. 2009.) It is an approach that has so far provided the most comprehensive notion of leadership; it is based on thorough research; besides analyzing leaders’ needs it also emphasizes followers’ viewpoints; and – because of its mentality and expression – it has a great influence on those interested in it, both in theory and in practice. (op. cit. 281)

As regards the advantages of this tendency, with reference to Yukl and Northouse we can emphasize the following:

- Transformational leadership proves that emotional aspects of leadership are as important as rational factors, and that symbolic acts are as significant as assertive behaviours.
- This approach gives a more complete picture about leadership than many other theories, and it has a very wide spectrum of analysis.
- It proves the efficiency of transformational behaviours as opposed to transactional leadership. (Fehér, 2009a, 281 with reference to Yukl, 1998, 327-328, 340 pp, Northouse, 2001, 145-148 pp)

We can state that TL highlights the increased importance of the value-, emotionally, and also cognitively based aspects of influence in an era when needs of development and participation on the part of employees in specific business cultures and segments are increasing, and these followers put often more emphasis on value considerations in search of goals that make more sense, and offer adequate challenges for them. It suggests that under specific circumstances and to a certain extent there can be specific exchanges between employer and employee, not only from traditional *transactional* (typically: economic/financial) *aspects* but also regarding the application of the less traditional—called *transformational*—leadership—influence instruments. In other words, at given work situations not only the employers, but also the subordinates can draw extra benefits from the leader-follower relationship if the leaders enhance the development of the followers and add further value to the employer-employee relation i. a. by clarifying values and goals, offering inspirations, individualized care, and involvement. We could call these new types of exchanges between leader and follower paradoxically „transformed transactions”. (Fehér, 2010, p. 17)

For a further characterization of the generic concepts of transformational leadership we have identified the following dimensions (Fehér, 2010, pp. 15-17; Fehér, 2009a, p. 281):

- a) The goals of transformation: Can *transformation* be defined pragmatically, subordinated to the process of pursuing business goals at the corporations, or according to more comprehensive, conceptually broader guidelines?
- b) Target of transformation: How much emphasis is laid on the transformation of the corporation and the people?
- c) The role of the transformation of the leader: How much emphasis is laid on the transformation of the leader himself/herself?
- d) The level of transformational leadership behaviours: At what leadership level and in what direction (downward, horizontally, upward) can we consider the use of transformational leadership theories effective?

The results of the conceptual analysis of the generic theories of transformational leadership by Avolio, Bass (2002), Tichy, Devanna (1986), Bennis, Nanus (1985), Kouzes, Posner (2007) according to selected dimensions are the following (see also Fehér 2009a, pp. 281-282)

- a) TL theory deals with impacts on followers within a *business context*. The suggested elements of a wider, ‘high-order’ concept of leader-follower relationship would not undermine the business efficiency orientation expressed in the theories, rather support or complement it in a special sense. The business concern is straight-forward, no hidden agenda for influencing people in a manipulative way can be seen.
- b) All the authors included into the analysis emphasize the *transformation of people*, while the direct influence on participators is of course not separated from the desired corporate purpose, the *transformation of corporations*. Most authors consider transformation of the organization and the people together, that is, they do not break it down – of course in reality it happens integrated – to organizational-business and human spheres of the transformational process. Accordingly they do not specifically elaborate on the individual or group theories of transformation, and their methodology.
- c) A core element of the classical TL concept is the leader’s awareness of his/her *transformation*, including his/her *planned development*. In relation to this it is important to note that TL “rather than being a model that tells leaders what to do, ... requires that leaders be aware of how their own behaviour relates to the needs of their subordinates and the changing dynamics within their organizations” (Northouse, 2012 /edition 2013/, p. 204).

- d) Although some of the earlier interpretations laid more emphasis on the top or upper levels of management, by today, the use at lower levels is gaining on importance. As Buchanan and Huczynski put it "...leadership is a widespread phenomenon. Leadership behaviours are dispersed rather than concentrated in the hands of managers." (2004, p. 744).

### **3. CONSIDERATIONS REGARDING THE APPLICABILITY OF THE TRANSFORMATIONAL LEADERSHIP CONCEPTS IN HUNGARY**

The evolution of leadership concepts and methodology is a complex process determined by factors of a multi-level force-field environment. Solutions proved to be effective in some cultures are not to be automatically transferred to different ones, even if there are indications for a need of the transfer. In some of our earlier presentations and publications several problems of the transfer of Human Resource technologies to Hungary, i.a. issues of infrastructure, professional image, competency, culture, semantics, and methodology were investigated. (Fehér, 2009b; Kovach, Cahoon, Fehér, 1994) Some of the new values needed by new type work organizations in the context of personnel selection were reviewed by Fehér (1996.) While describing the pre-conditions and ways of the adaptation of change management technologies at certain organizations in Hungary, issues of the specific historical-economic-cultural context, and some of the typical traps in the process of the transfer were dealt with (Fehér and Bonifert, 2001, Fehér, 1997).

Suggestions supporting a possible relevance of our topic, the Transformational Leadership in Hungary can be categorized as of theoretical and practical nature.

#### *a. Theoretical arguments:*

- The theory under discussion offers effective, conceptually based, practical solutions with proved validity across many cultures, industries and organizational levels in such basic, essential segments of leadership as *identifying need for change, goal-setting, empowerment, development, performance management, problem solution*.
- TL, rather than 'neglecting' or 'replacing' transactional behaviours, suggests a completion of them by new ones. Theoretically this increases the likelihood of transferability.
- TL puts the development of followers into focus. We can state that tendencies of developmental concern, as a rule, could have a special relevance for an economy suffering from the shortage of material resources.

#### *b. Practical arguments supporting the relevance in Hungary:*

- For a long period Hungary has been a transformational economy and is under renewal now in its specific regional and national context. This grants a special importance to a leadership tendency of transformational focus.
- There is no reason to tie TL specifically to only certain periods/phases of recent business development. Its relevance can be marked e. g. under circumstances of high task complexity, lack of standardization, environmental turbulence, changing work values.

When thinking of the transfer and adaptation of foreign concepts we have always to keep in mind that the opportunities for, and the motivations and process of the transfer are determined to a large extent by the variables of the specific organizational and macro environment. In the process of adaptation – besides the mentioned variables – also the cognitive and other complex value, interest, power related, emotional, volitional factors, are not to be neglected. It is important to note here that in a search for a list of environmental factors determining the use of TL practices many items cannot be labelled as 'purely' driving or refraining forces of the evolution of leadership behaviours rather as those potentially bearing both characters.



In the macro level it is the historical background and a series of evolving societal, political, economic, cultural and other characteristics that influence the process of adaptation. Intervening variables in the mezzo level include:

- Organizational characteristics, e. g. industry, volume, ownership, life cycle, culture.
- Actual economic-cultural changes, the level of complexity of these changes.
- Values, power and transactional relationships in the background of changes.
- Behavioural patterns of dominant coalition and/or reference groups/group members (e. g. mother company executives, supervisors).
- Labour market conditions for managerial positions and (self-) employment effects at SME-s.
- Operational characteristics (economic-technological environment of jobs/co-operation, availability of resources, level of decentralization in policy formulation, time-constraints).
- Sociological, financial and educational parameters, values/attitudes of peers/subordinates.
- Knowledge base supporting managerial philosophies: competence of HR department, availability of organizational information, training-development and consultancy interventions and a ‘critical mass’ of role models.

Variables in the individual level include values, socio-financial circumstances, emotional-volitional and cognitive-educational factors, specific skills, like communication, symbolic expression etc., and personal power base.

#### **4. THE METHOD**

We have started a research for identifying the presence of certain TL behaviours in Hungary and showing the impact of certain types and background factors of the variables aforementioned, like industry, forms of ownership, size of the organization, organizational function, managerial levels, demographic parameters, managerial experience. To measure managerial practices and behaviours we use—under a special permission from Publisher Wiley, San Francisco—the Leadership Practices Inventory Self (LPI Self) developed by Jim Kouzes and Barry Posner. The LPI measures five leadership practices according to the Leadership Challenge approach (Kouzes, Posner, 2007, 2010; Northouse, 2012 /2013 ed./). The model was created through an empirical way, by interviewing thousands of leaders to answer the question: “What do the admired and exemplary leaders do to mobilize others to want to get extraordinary things done in organizations?” (Kouzes, Posner 2007) We can describe admired leaders’ behaviours by their five practices. “Model the way” is about how leaders are clear about and believe in their own values, leadership philosophy and guiding principles. “Inspire a shared vision” suggests that admired leaders are able to paint a “big picture” of what the organization aspires. “Challenge the process” is about how leaders change the status quo and how they challenge the people to try new methods among their work. By “enabling others to act” leaders develop relationship with others, and give freedom and choice in decision making. “Encourage the heart” suggests that how leaders support and recognize their subordinates. (op. cit., Northouse 2012/2013 ed/) Kouzes and Posner have done validity and reliability research on LPI (Posner 2010).

In the following Tables we summarize the results.

**Table 1: Sample of data collection between 2005 and 2009**

Country	Self N	Observer N
Canada	1429	14035
South America	5183	2635
Europe	4175	7511
Asia	3746	18665
Australia/New Zealand	1155	3098
U.S.	59497	180620

source: Posner 2010

Reliability of Leadership Practices Inventory was investigated through Cronbach's alpha coefficient. Each index (Table 2.) is above than 0.70 that could be acceptable.

**Table 2: Cronbach's alpha of LPI**

Leadership practices	Self	TOTAL of observer	Superior	Subordinate	Co-worker	Others
<b>Model the way</b>	0,84	0,85	0,82	0,87	0,85	0,85
<b>Inspire share vision</b>	0,91	0,92	0,91	0,92	0,92	0,91
<b>Challenge the process</b>	0,86	0,87	0,85	0,87	0,87	0,87
<b>Enable others to act</b>	0,86	0,87	0,83	0,89	0,86	0,86
<b>Encourage the heart</b>	0,91	0,92	0,90	0,92	0,91	0,91

source: Posner 2010

Validity of Leadership Practices Inventory was tested through positive workplace attitude scale. PWA is concerned to observer respondents and it contains 10 items about their feelings of and assessments about their level of team spirit, organizational pride, behavioural commitment, motivation, productivity, clarity of expectations, trust in management, appreciation, personal as well as workplace effectiveness.

**Table 3: Relationship between five leadership practice and PWA**

Leadership practices	Positive Workplace Attitude	Mean	Std. dev.
<b>Model the way</b>	weak	42,16	9,83
	moderate	47,16	7,72
	strong	51,40	7,13
<b>Inspire share vision</b>	weak	38,69	11,58
	moderate	44,18	9,76
	strong	49,20	9,17
<b>Challenge the process</b>	weak	40,14	10,43
	moderate	45,12	8,55
	strong	49,47	8,11
<b>Enable others to act</b>	weak	45,25	9,70
	moderate	49,81	7,13
	strong	53,39	6,27
<b>Encourage the heart</b>	weak	40,85	11,50
	moderate	46,28	9,42
	strong	51,01	8,53

source: Posner 2010

The LPI provides the respondents with information about their leadership behaviours. It contains 30 statements (6 behaviours compose 1 practice). Each statement is rated by a 10 points frequency scale. “1” indicates “almost never” and “10” indicates “almost always”. The respondents rate each statement by right of frequency. Higher scores represent higher frequency of leadership practices and behaviours. LPI has not been available in Hungarian so far. After a translation a retranslation into English followed and the instrument was sent back to the official publisher for approval. We collected the sample through paper and online form of LPI. To run the online version we receive support from Psidium OnlineTeszték Ltd.

## 5. THE SAMPLE

The research was conducted among formal managers. 33 men and 18 women, in the aggregate 51 respondents have participated so far in the survey in the preliminary phase, all Hungarians. The youngest is 25 years and the oldest are 60 years old. 8 respondents bear supervisory level, 23 respondents bear middle level and 16 respondents bear executive level positions. The respondents have come from a variety of sectors, e. g.: agriculture, finance, IT/telecom, education, governance, building and energy industry, chemistry, and several types of departments: chief execution, HR, engineering, production, IT, finance, marketing, R&D.

## 6. RESULTS

For estimating the frequency of leadership behaviours we have counted average scores. Table 4 shows the most frequent 5 leadership behaviours and Table 5 shows the less frequent 5 leadership behaviours with the average scores. At the end of the sentences, the letters suggest the practices. “M” means model the way. “I” means inspired a shared vision. “C” means challenge the process. “Ena” means enable other to act. “Enc” means encourage the heart.

*Table 4: The most frequent 5 leadership behaviours*

	Min	Max	Mean	Std. Dev
26. Is clear about his/her philosophy of leadership M	3	10	8,71	1,553
27. Speaks with conviction about meaning of work I	4	10	8,59	1,711
14. Treats people with dignity and respect Ena	5	10	8,57	1,375
11. Follows through on promises and commitments M	5	10	8,55	1,316
4. Develops cooperative relationships Ena	3	10	8,51	1,433

Source: own work

*Table 5: The less frequent 5 leadership behaviours*

	Min	Max	Mean	Std. Dev.
16. Asks for feedback on how his/her actions affect people's performance M	2	10	6,76	1,818
9. Actively listens to diverse points of view Ena	3	10	6,76	1,850
7. Describes a compelling image of the future I	3	10	6,71	1,858
15. Creatively rewards people for their contributions Enc	1	10	6,67	2,046
12. Appeals to others to share dream of the future I	1	10	6,41	2,291

Source: own work

We can explain the nature of difference of the most frequent 5 leadership behaviours and the less frequent 5 leadership behaviours several ways. Firstly, there is a cultural specialty on

Hungarian leadership behaviour. For example the Hungarian leaders are clear about their philosophy, develop cooperative relationships, speak with conviction about meaning of work, but ask for feedback, listen actively, rewards creatively, appeals others to share dream have not been infiltrated in the Hungarian leadership behaviour. On the other hand we can explain the result that our Hungarian translated version is hard to construing by Hungarian respondents. However the meanings of items are not so clear.

In the course of research we have generated the five leadership practices index. Table 6 shows these according to descending order.

**Table 6: Average scores of five leadership practices**

	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. Dev.</b>
Model	38	58	48,23	5,333
Inspire	32	59	45,81	6,490
Challenge	22	57	45,36	7,251
Enable	35	55	46,55	5,094
Encourage	31	58	46,32	6,994

Source: own work

**Table 7: Mean of five leadership practices by Hungarian and international data**

	<b>Hungarian data</b>	<b>International data</b>	<b>p</b>
	<b>Mean</b>	<b>Mean</b>	
Model	48,23	46,70	0,085
Inspire	45,81	43,59	0,027
Challenge	45,36	44,69	0,24
Enable	46,55	49,34	0,001
Encourage	46,32	45,79	0,618

Source: own work and <http://media.wiley.com/assets/7008/99/LPINormsFINAL012012.pdf>

We used one-sample t test to compare the mean of sample to international data. We can establish statistically significant difference from test values (international data) in case of “Inspire a share vision” and “Enable others to act (Table 7.)

To find statistically significant relationship to gender and the five practices comparing of means and ANOVA test was used (Table 8).

**Table 8: Report of ANOVA by gender**

<b>Gender</b>		<b>Model</b>	<b>Inspire</b>	<b>Challenge</b>	<b>Enable</b>	<b>Encourage</b>
Male	Mean	47,21	43,88	44,79	45,97	44,91
	Std. Deviation	5,58	6,34	6,69	5,41	7,90
Female	Mean	49,56	48,89	48,00	47,89	48,83
	Std. Deviation	5,00	5,35	8,33	4,97	4,87

Source: own work

If we take a look at Table 9, we can see that Inspire a shared vision to gender shows significant relationship but this relationship is weak. (Eta squared: 0,142) It means that women use “Inspire a shared vision” practice more frequently than men. If we take a look at the means (Table 5) we can see that women use more frequently all of the leadership practices but ANOVA test does not confirm it.

**Table 9: ANOVA by five practices to gender**

		Sum of Sq.	df	Mean Sq.	F	Sig.
Model * Gender	Between Groups	63,962	1	63,962	2,204	0,144
	Within Groups	1421,96	49	29,02		
	Total	1485,922	50			
Inspire * Gender	Between Groups	292,354	1	292,354	8,078	0,007
	Within Groups	1773,293	49	36,19		
	Total	2065,647	50			
Challenge * Gender	Between Groups	120,171	1	120,171	2,255	0,140
	Within Groups	2611,515	49	53,296		
	Total	2731,686	50			
Enable * Gender	Between Groups	42,9	1	42,9	1,549	0,219
	Within Groups	1356,747	49	27,689		
	Total	1399,647	50			
Encourage * Gender	Between Groups	179,361	1	179,361	3,660	0,062
	Within Groups	2401,227	49	49,005		
	Total	2580,588	50			

Source: own work

During the analysis we created three age groups. Below 35, from 36 to 45 and Above and equal 46. Table 10. and 11. show the report and results of ANOVA.

**Table 10: Report of ANOVA by age group**

Age_group		Model	Inspire	Challenge	Enable	Encourage
-35,00	Mean	47,6000	47,6000	45,8000	47,1333	47,1333
	N	15	15	15	15	15
	Std. Deviation	6,15049	5,87732	7,37951	6,33434	7,55803
36-45	Mean	48,4091	44,3636	44,9091	45,6364	45,7273
	N	22	22	22	22	22
	Std. Deviation	5,28843	6,77914	8,23991	5,32331	6,79763
46-	Mean	47,9286	45,5714	47,6429	47,7143	46,2857
	N	14	14	14	14	14
	Std. Deviation	5,28371	6,34537	6,07146	3,93072	7,80955

source: own work

If we take a look at Table 11. we can see that there is not significant difference by five practice to age groups. It means that the five leadership practices are not influenced by age.

In our research managerial position has also been included. Table 12 and 13 show report and result of ANOVA. Our question was that what kind of relationship is between frequency of five leadership practices and managerial positions.

**Table 11: ANOVA by five practices to age groups**

		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Model	Between Groups	6,075	2	3,037	0,099	0,906
	Within Groups	1479,847	48	30,830		
	Total	1485,922	50			
Inspire	Between Groups	93,528	2	46,764	1,138	0,329
	Within Groups	1972,119	48	41,086		
	Total	2065,647	50			
Challenge	Between Groups	64,254	2	32,127	0,578	0,565
	Within Groups	2667,432	48	55,572		
	Total	2731,686	50			
Enable	Between Groups	41,966	2	20,983	0,742	0,482
	Within Groups	1357,681	48	28,285		
	Total	1399,647	50			
Encourage	Between Groups	17,634	2	8,817	0,165	0,848
	Within Groups	2562,954	48	53,395		
	Total	2580,588	50			

Source: own work

**Table 12: Report of ANOVA to managerial position**

<b>Lead_Pos</b>	<b>Model</b>	<b>Inspire</b>	<b>Challenge</b>	<b>Enable</b>	<b>Encourage</b>	
supervisory	Mean	48,0000	49,1250	45,6250	49,3750	47,0000
	N	8	8	8	8	8
	Std. Deviation	5,95219	5,86606	7,79995	4,43807	7,48331
middle	Mean	47,3600	44,0000	45,4800	45,8800	46,2000
	N	25	25	25	25	25
	Std. Deviation	5,59673	6,41613	8,56407	5,44916	6,85565
executive	Mean	49,0000	46,3889	46,6667	46,5000	46,1111
	N	18	18	18	18	18
	Std. Deviation	5,19049	6,24160	5,58359	5,28316	7,88065
Total	Mean	48,0392	45,6471	45,9216	46,6471	46,2941
	N	51	51	51	51	51
	Std. Deviation	5,45146	6,42751	7,39146	5,29084	7,18413

Source: own work

If we take a look at Table 13. we can establish that there is not significant difference between managerial positions. It means that the five leadership practices are not influenced by level of managerial position.

**Table 13: ANOVA by five practices to managerial position**

		Sum of Squares	df	Mean Square	F	Sig.
Model * Lead_Pos	Between Groups	28,162	2	14,081	0,464	0,632
	Within Groups	1457,760	48	30,370		
	Total	1485,922	50			
Inspire * Lead_Pos	Between Groups	174,494	2	87,247	2,214	0,120
	Within Groups	1891,153	48	39,399		
	Total	2065,647	50			
Challenge * Lead_Pos	Between Groups	15,571	2	7,786	0,138	0,872
	Within Groups	2716,115	48	56,586		
	Total	2731,686	50			
Enable * Lead_Pos	Between Groups	74,632	2	37,316	1,352	0,268
	Within Groups	1325,015	48	27,604		
	Total	1399,647	50			
Encourage * Lead_Pos	Between Groups	4,810	2	2,405	0,045	0,956
	Within Groups	2575,778	48	53,662		
	Total	2580,588	50			

Source: own work

We must note, however, that we could not draw deeper conclusions, because of the size of our sample. Our future goals are: increasing the size of sample, doing research on validity and reliability, attaching more variables, for example experience, size of organization, sector of organization, number of subordinates to investigate the relationship of TL leadership practices and behaviours to these variables.

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**Kenneth Obinna Agu**

## **1.7 INNOVATIVENESS AS THE MAIN PURPOSE OF MANAGEMENT AND ORGANIZATION SUCCESSFULNESS**

**Summary:** Many literatures have sourced the best practice for innovativeness by recognizing that it consist a structural formation while to some literatures, it is a cognitive foundations. All in all, emphasize is to show how organization can resist and still be profitable in today's hostile environments and huge challenges by employing the use of technological and knowledge platform, which means that innovative organization are those that can respond and shape its external environmental stimulus. Some authors described polar typologies and characterized organization into two structures: 'mechanistic in nature', which is rigid and hierarchical and 'organic in nature', which is more flexible and can rapidly change to innovation. However, Mintzberg (1979) suggested a design that would match the organization situation. He developed some parameters of factor analysis, which means that effective structuring requires consistency of design parameters and contingency factors. The paper therefore would present innovativeness as organizational structures and management encapsulation. The study would examine different types of management and organization structures that could lead to innovativeness and different forms of organization contingencies to be innovative, relative to both evolutionary and revolutionary technological changes. The study would use interviews and questionnaires from managers and employees of Vodafone Hungary to check the importance of innovation structuring. At end, the study tried to prove that structures of the management and organization generate innovativeness.

**Keywords:** innovation, strategy and structures, management style, organization

### **1. INTRODUCTION**

In recent years, organizations and management has stressed the need of innovation-driving conceptualization methodology as a crucial part of competitive advantage. Many social scientists amongst them are Mintzberg (1979), Chandler (1962 and 1998) and Lazonick (1990), have sourced the best practice for innovativeness by recognizing that it consist a structural formation and a cognitive foundation. All in all, emphasize is to show how organization can resist and still be profitable in today's hostile environments and huge challenges by employing the use of technological and knowledge platform, which means that innovative organization are those that can respond and shape its external environmental stimulus.

Innovativeness encompasses the ability to nurture and use natural creativity, develop new ideas and bring them to life (Mullins, 2010, p. 802). The author wrote that organizations and management should identify their clusters through the resources which diverse cultures plays in to help enhancement of its capability through what she called "Clusters of opportunities". They are:

- Organizational agility or liveliness will ensure that organizations have and utilize the inherent potential and energy of their employees.
- Organizational clarity is recognizing what is and what is not important in relation to the business context. This is about decision-making, sound judgment and clarity about core organizational issues.
- Organizational flexibility is the ability to adapt and change at the rate of change required.

- Organizational genuineness is about operating in line with values and innate wisdom and common sense of mankind that grows from different cultural orientations and dimensions.
- Organizational openness allows for fluid of different cultural interactions within and between the inner world of the organization and its outer world.

Integration of different cultural-role-point at the heart of the organization could help attract these clusters of opportunities which are equals to innovative organization or team.

When we are talking about innovativeness, we are expressing knowledge-based conversion that results to creativity. The knowledge are codified (explicit) and tacit (implicit). Codified knowledge is transformed into information, which can be transmitted through information infrastructures. Nevertheless, tacit knowledge cannot be easily transferred because it has not been put in an explicit ‘information’ form. However, to convert and transmit tacit knowledge, which is always in form of “unknown” knowledge such as shared beliefs and ways of interpretation. To transfer this kind of knowledge is through social interaction as in apprenticeship or working/group solving relationships. It implies that transfer is sensitive to a social context. It means the more social interaction and relationship are maintained across different cultural group, the higher the innovativeness to solve problems and skills to achieve creativity.

In order to comprehend innovation, we need to understand organization behaviour and management style. The big questions the study wish to ask are:

- What is the organizational behaviour?
- Which behaviour can lead to innovativeness?
- What are the management styles that can aid innovation?
- What are the consequences of flexible and or rigid management style towards innovativeness?

## **1.1. OBJECTIVES OF THE STUDY**

From the management and organizational success perspective, there are two main elements namely, process of management and organizational context and people course of action (Mullins, 2010). The first element is what Mullins called the psychological approach which is basically the people-organization contractual terms and or relationship management.

The second element structural styling and result oriented. There are many behavioural influences such as the individual, the group, the organization and the environment.

So, the specific objectives of the paper are: to examine how organization and management coordination could create innovativeness; to identify different organizational behaviours and management styling that could span innovation; to show which of the school of thoughts and style fits into different innovative approaches; finally, to draw conclusions that innovation is a byproduct of organization and management technique.

The paper therefore would want to prove that successful innovation is a functionality of organizational behaviour and management styling.

## **2. LITERATURE REVIEW**

### **2.1. ORGANIZATIONAL INNOVATIVENESS**

These days of tight competition among organization create the willingness to embrace culture of innovation. The success and failure of atypical organization is the culture it apprehends and its operation and management style. It is imperative that employees live and

work within the four walls of culture be it individual, group or corporate cultures; we are bounded and breathe in cultures.

There are many definition of organization culture found in literatures, but interestingly has being very different from viewpoints of anthropologist, sociologist, psychologist, politicians and management researchers. Hoechlin (1995) defined culture as a shared system of meanings. She continued to say that culture dictates what groups of people and organization pay attention to. It guides how the world is perceived, how the self is experienced, and how the life itself is organized. Rugman and Collinson (2009) defined culture as the sum total of the beliefs, rules, techniques, institutions and artifacts that characterize human populations.

Hofstede (1980 and 1991) called it the collective programming of the mind. Schneider and Barsoux (2003) defined culture as shared patterns of behaviour. According to the authors, culture serves as a lens through which we perceive the other, organize out operation, and design the management style and coordination. We tend to use the organization culture as a preference point to evaluate the other and benchmark our output.

The overall determinant of organization culture is the management and strategy put in place. From management perspective, innovativeness can be achieved through a well functional management style and structure that support creativity and flexibility to the robust nature of the world of globalization. According to Mullins (2010), there are many designs and structures namely: simple structure, machine bureaucracy, professional bureaucracy, divisionalised form and adhocracy. Most of these structures are rigid and hierarchical, most are flexible, and can rapidly change to innovative solution. The bureaucratic archetypes are stiff nosed into rigidity, which makes it hard to cope in ever changing environment. However, both classifications are neither wrong nor right but the contingency around an organization is the main factor to be considered.

Therefore, it is the responsibility of the management to know how the industry it is into are fairing. That is, how organization adapt on the different scenarios including market, technical, economic and scientific matters a lot to its adaptability.

Organizational structure as both cause and effect of managerial strategic choice in response to market opportunities is the way many micro-economists view it. This is from two variables mainly strategy and structure and both are interrelated and are of people-lead-innovation. The purpose of strategy is mainly to have a pattern of major objectives, goals and essential policies and defined very accurately and in a constant manner. While structure is the division and coordination of tasks among members of the organization to achieve goals and objectives, it brings into organization new ways of doing things, which is basically „innovation” (Mullin, 2010). There are mainly two variables that determine the competitive advantage (innovative solution) of a business enterprise: governance modes and organization cultures and values. These are powerfully influence to its rate and direction towards innovative activities.

## **2.2. LEADERSHIP, RELATIONSHIP AND CULTURAL STYLES**

In practice, the activities of an organization and the role of management cannot be isolated neatly into categories life. As a principle, people are the key resources of any organization. But since we are talking about organization culture, the employees must have the ability to learn and believe on the culture spelled out in the mission, vision and guiding principles, with or without compromising their individual cultures.

Organizational culture is express in the mission, vision and guiding principles of the firm, in other words “corporate strategy”. As a consequence, gives rise to leadership style and relationship based within and outside the firm, practically viewed as a winning tactics for organization to achieve growth, market penetration opportunities and industry leadership.

Every organization has a corporate strategy it must follow to achieve a cohesive work environment and goals. Corporate strategy is concerned with the overall scope of an organization and how value will be added to the different parts of the organization (Gerry et al. 2008, p. 7).

Organizational culture (leadership style, relationship style and cultural style) and its ability to generate innovativeness relate to the symbolic dimension of formality and informality, also to the extent the organization can capture the knowledge of the employees. According to Mullins (2010, p. 4), the behaviour of people and management style cannot be studied in isolation. It is necessary to understand interrelationships with other variables that together comprise the total organization such as formal aspect (overt) and behavioural aspect (covert). Organizational culture leads to organizational learning and innovation modelling within the organization. Literatures mainly classified the forms into two types namely: “J-form” and “adhocracy” (Lam, 2000 and 2002). J-form is the organization that exploits learning to achieve collective competencies and problem-solving platform (organizational community that nurture tacit and radical knowledge that emphasize continuous improvement across all functions) while adhocracy puts emphasizes on individual specialization (an organic and adaptive format that foster ad-hoc and specialist project team to solve problems) There are concerns when team member leaves the organization, and supposedly, the adoption of adhocracy by large corporations proved difficult to sustain on this ever changing environment.

Both forms have strong innovative capacities but diverge in knowledge configurations, patterns and types of competencies produced. Researchers argue that the factor is an outcome of a passive environmental selection process while some researchers argue that it is a product of managerial action and strategic choice in shaping the organizational change. These however become ambiguous in nature as researchers treat organizational change as a technological triggering response. In general, many changes are tendencies of internal organizational dynamics, actor cognition and behavioural conditions.

The view of many researchers suggests that long-term key of organization relies on its ability to build on existing competencies while simultaneously exploring new possibilities to achieve competitive advantage over competitors. This could be interpreted in this form that organization should create the capacity for learning, values, interest and culture in shaping organizational change and innovation through leadership competency.

Leadership is one of the key factors that shape employees behaviours, thinking and feelings and also the ability to share knowledge that would be very useful to the organization. Leadership behaviourism always comes from different forces within and outside the organization. If the leadership style creates trust, then it can apprehend a sort of „collective memory” of the employees which is basically what Hofstede called „culture”. It can either be a „stock” of knowledge stored as hard data or represent knowledge in a state of „flow” emerging from interaction. Both individuals and organizations are learning entities. All learning activities, however, take place in a social context, and it is the nature and boundaries of the context that make a difference to learning outcomes. In broad context, leadership could play out in the following forms.

*Autocratic leadership style:* an extreme form of transactional leadership, where leaders have absolute power over their workers or team. Staff and team members have little opportunity to make suggestions, even if these would be in the team's or the organization's best interest. Most people tend to resent being treated like this. Therefore, autocratic leadership usually leads to high levels of absenteeism and staff turnover. For some routine and unskilled jobs, the style can remain effective because the advantages of control may outweigh the disadvantages.

*Bureaucratic leadership style:* follow rules rigorously, and ensure that their staff follows procedures precisely. This is a very appropriate style for work involving serious safety risks

such as working with machinery, with toxic substances, or at dangerous heights or where large sums of money are involved such as handling cash.

*Charismatic leadership style:* can seem similar to transformational leadership, because these leaders inspire lots of enthusiasm in their teams and are very energetic in driving others forward. However, charismatic leaders can tend to believe more in themselves than in their teams, and this creates a risk that a project, or even an entire organization, might collapse if the leader leaves. In the eyes of the followers, success is directly connected to the presence of the charismatic leader. As such, charismatic leadership carries great responsibility, and it needs a long-term commitment from the leader.

*Participative leadership style:* although participative leaders make the final decisions, they invite other members of the team to contribute to the decision-making process. This not only increases job satisfaction by involving team members, but it also helps to develop people's skills. Team members feel in control of their own destiny, so they're motivated to work hard by more than just a financial reward. Because participation takes time, this approach can take more time, but often the end result is better. The approach can be most suitable when working as a team is essential, and when quality is more important than speed to market or productivity.

*Laissez-faire leadership style:* this is a French phrase means „leave it be,” and it's used to describe leaders who leave their team members to work on their own. It can be effective if the leader monitors what is being achieved and communicates this back to the team regularly. Most often, laissez-faire leadership is effective when individual team members are very experienced and skilled self-starters. Unfortunately, this type of leadership can also occur when managers do not apply sufficient control.

*People-oriented leadership or relations-oriented leadership style:* this is the opposite of task-oriented leadership. With people-oriented leadership, leaders are totally focused on organizing, supporting, and developing the people in their teams. It is a participative style, and it tends to encourage good teamwork and creative collaboration.

*Task-oriented leadership style:* focus only on getting the job done, and they can be quite autocratic. They actively define the work and the roles required, put structures in place, plan, organize, and monitor. However, because task-oriented leaders do not tend to think much about the well-being of their teams, this approach can suffer many of the flaws of autocratic leadership, with difficulties in motivating and retaining staff.

*Servant leadership style:* describes a leader who is often not formally recognized as such. When someone, at any level within an organization, leads simply by meeting the needs of the team, he or she is described as a „servant leader.” In many ways, servant leadership is a form of democratic leadership, because the whole team tends to be involved in decision-making.

*Transactional leadership style:* this style of leadership starts with the idea that team members agree to obey their leader totally when they accept a job. The „transaction” is usually the organization paying the team members in return for their effort and compliance. The leader has a right to „punish” team members if their work doesn't meet the pre-determined standard. Team members can do little to improve their job satisfaction under transactional leadership. The leader could give team members some control of their income/reward by using incentives that encourage even higher standards or greater productivity. Alternatively, a transactional leader could practice „management by exception” – rather than rewarding better work, the leader could take corrective action if the required standards are not met. Transactional leadership is really a type of management, not a true leadership style, because the focus is on short-term tasks. It has serious limitations for knowledge-based or creative work.

*Transformational leadership style:* people with this leadership style are true leaders who inspire their teams constantly with a shared vision of the future. While this leader's

enthusiasm is often passed onto the team, he or she can need to be supported by „detail people.” That is why, in many organizations, both transactional and transformational leadership is needed. The transactional leaders or managers ensure that routine work is done reliably, while the transformational leaders look after initiatives that add value.

As leaders of the organization converge to solve problems, they develop different relationships of different tones and values. The relativity brings in innovative solutions. Gerry and his co-authors, Scholes and Whittington (Gerry et al pg. 161) described sources and indicators of power that could be potential innovative solution within an organization and for external stakeholders (Table 1).

**Table1: Power and Control within and outside the organization culture**

<i>Sources within organization</i>	<i>Indicators within organization</i>
Hierarchy (formal power) e.g. autocratic decision making	Status
Influence (informal power) e.g. charismatic leadership	Claim on resources
Control of strategic resources e.g. strategic products	Representation
Possession of knowledge and skills e.g. computer specialists	Symbols
Control of the human environment e.g. negotiating skills	
Involvement in strategy implementation e.g. by exercising discretion	
Sources for external stakeholders	Indicators for external stakeholders
Control of strategic resources e.g. materials, labour, money	Status
Involvement in strategy implementation e.g. distribution outlets, agents	Resources dependence
Possession of knowledge and skills e.g. subcontractors, partners	Negotiating arrangements
Through internal links e.g. informal influence	Symbols

Source: Own creation, based on Gerry et al., 2008

Looking at power within the organization would be shared unequally between various stakeholders. For the purpose of this discussion, power can be a source of innovative solution and of non-solution too. Power is defined by Gerry et al (p. 160) as the ability of individuals or groups to persuade and induce or coerce others into following certain courses of action. This is a mechanism by which one set of expectations will influence strategic development or seek compromise with others. Power sets the framework of culture, leading to collective memory. Culture strength by Taylor Cox pinpointed the combination of the extent to which norms and values within the organization are clearly defined and are rigorously adopted. Hoecklin (1997) listed six dimensions of organization culture namely: motivation, relationship, identity, communication, control, and conduct. These dimensions are in line with Kirton and Greene and Taylor Cox versions.

However, organizations that excel at leveraging their know-how (people) in a systematic way will a Knowledge Management strategy, corresponding architecture, and deploying effective knowledge systems, through formal and informal relationship format. Key to leveraging the knowledge of an organization is providing insight, thought leadership and context to those who have the most at stake in generating and using organizational knowledge. In order to generate this pragmatic strategy (innovation), it is important to provide a framework through leadership structure, well defined strategy and knowledge capturing tools that could disseminate to be „innovation”.

Innovation is possible when organizational culture spells out very well in the mission statement of the organization. The mission serves as organizational learning and innovation model that could develop to be a culture. During this period, the leadership is formed based

on the culture of the organization that determine the internal and external relationship of the organization. Successful management of this virtuous circle could spark innovative solutions, with high economic values. Frank and Bernanke (2009) in the book “thinking like an economist” argue that an action should be taken if, but only if, its benefit is at least as great as its cost. Therefore, leaders benefit from different engaged relationships. After all, what triggers the engagement is to benefit, which is obvious in an economic system. Schumpeter (1911) argue that innovation with the introduction of what he calls ‘new productive combinations’, consisting in a different combination of existing means of production with the aim of producing a new good, or a new production method, or opening up a new market, or securing a new source of supplies of raw materials and semi-finished items, or reorganizing some industry by introducing new forms of market and new forms of competition and establishing and or re-forcing new cultural aptitude.

Overall, the economic system of the virtuous circle becomes very vital for innovative solutions. Generative relationships require particular places and entities – such as user groups, fairs and commercial networks, professional organizations, and information systems – that perform the important function of scaffolding structures, that is, they support the system of interactions and the market.

### **3. RESEARCH METHODOLOGY**

The strategy is to gain a good understanding of the context of the research and the process that was enacted to analyze the theory appropriately. According to Saunders et al. (2003 p.83) a case study strategy can be of particular interest if that is the aim.

Jankowicz (2005) wrote that survey method draws most of its data from the present. This is surveying people to establish their views of what they think, believe, value, or feel through interviews and questionnaires. Survey method will help discover these views for their sake and to support an argument of the research work and generalise conclusions more widely. Jankowicz views survey method as perfect method to carry out research work at any level.

Since this topic is connected to innovation and management style (organization strategy and structure), it was right to obtain information from people who are on the management level of the organization. Obviously, the number of people on that level is minimal, only three people was reached for interview. For confidentiality sake, the study would present the company name, but the managers’ name as anonymous. The name of the company is Vodafone Hungary Kft and the names of managers withheld. The questions the study presented have two dimensions namely: leadership style and organizational structure.

Leadership style is the way the management leads the people in organization. The study wants to examine three key elements of decision-making process in the organization. There are three basic styles:

- autocratic: making decision without consultation
- democratic: making decision with input generated during consultation process
- laissez-faire: allowing decision to be made by people in the team

Organizational structure that has two variables, namely: strategy and structure.

- strategy: as defined by the McKinsey 7-S Framework has the following variables: structure, strategy, people, management style, systems and procedures, guiding concepts and shared values (that is culture), and the present and hoped-for corporate strengths and skills.
- structure: as a perspective of social and organizational behaviour in understanding the relationship between formal and informal aspects of organization.



### 3.1 DATA COLLECTION AND ANALYSIS

The paper used two methods of testing, interview and questionnaire to compare the literature. With the interview, three managers were interviewed at the head office of Vodafone. One woman and two men of them were around 35 and 55 years old. Three questions were asked and results listed below.

The main purpose of the interview was to get a clearer view on innovative, organization strategy and structure and management style. This could be achieved making sure the right questions are being asked, using appropriate research techniques and controls and finally presenting the research findings in a clear, comprehensive format that leads to action.

*Interview Result:* the managers were interviewed separately and classified into three groups (Group 1, Group 2 and Group 3), below questions were asked and their answers are presented on the table according to the group.

- What drives innovation in your company?
- What of sort of manager are you?
- Do you consider strategy and structure as main focus to achieve innovation?

**Table 2: Analysis of the first interviewed manager group**

<b>1</b>	First question	People and technology deployment and coordination
	Second question	democratic
	Third question	Yes because it set the direction

Source: Own creation

**Table 3: Analysis of the second interviewed manager group**

<b>2</b>	First question	Ability of people to work and think freely
	Second question	Democratic and laissez faire
	Third question	Yes, it should be spelled out clearly in order to achieve innovation

Source: Own creation

**Table 4: Analysis of the third interviewed manager group**

<b>3</b>	First question	Company ability to understand the workers and assign suitable roles
	Second question	Democratic and autocratic
	Third question	Yes, should be dedicated to achieve innovativeness and competitive advantage

Source: Own creation

To conclude, the questions brought mixed reactions and answers from the managers. All confirmed that for innovation to flourish in organization, needs freedom of employees, clear roles in order the employees to understand the business processes and above all a flexible management style. This confirms that management styling, strategy setting and structure are keys of innovativeness organization.

With the second method, questionnaires were distributed inside the Vodafone Consumer Management Unit (CMU). This department alone employs more than 350 people. CMU departments are technology deployment, project management, terminals and consumer care centre. CMU is the only Vodafone unit that interfaces with all internal and external departments. Therefore, CMU seems the right department to investigate what people feel concerning the management styling and people coordination, its effect to achieve innovativeness and successfulness of the company.

The survey questionnaires included three questions and due to Vodafone information sharing policy, only 20 questionnaires were distributed. All were filled because I was sitting

beside the people to collect the papers immediately. The questionnaires were in English and the questions were composed of ‘open-ended type’ with available answers (a–d). The questions were similar to what the managers were asked. This was done to validate what they all think that can help reproduce innovative culture in Vodafone. The following questions were asked to the employees

- What do you think drives innovation in your company?  
Answer: (a) good people management (b) company strategy (c) good team work (d) good pay
- What of sort of employee are you?  
Answer: (a) think creatively with help of management (b) think creatively without help of management (c) can-do-attitude person (d) can-do-only with team support
- Do you consider strategy and structure as main focus to achieve innovation?  
Answer: (a) yes, it does matter (b) no, it does not matter (c) maybe (d) do not know

**Table 5: Analysis of the questionnaires**

<b>Question 1</b>	<b>What do you think drives innovation in your company?</b>	<b>Rate</b>
	good people management	5
	company strategy	2
	good team work	4
	good pay	9
<b>Question 2</b>	<b>What of sort of employee are you?</b>	<b>Rate</b>
	think creatively with help of management	5
	think creatively without help of management	2
	can-do-attitude person	10
	can-do-only with team support	3
<b>Question 3</b>	<b>Do you consider strategy and structure as main focus to achieve innovation?</b>	<b>Rate</b>
	yes, it does matter	9
	no, it does not matter	2
	maybe	6
	do not know	3

Source: Own creation

When you compare answers from the interview and questionnaires, it is very surprising. It is interesting to see how employees themselves view innovativeness and management. Managers on their part view it differently. Their view is in line with the company strategy and structure. The employees view is very much self centered. Their view is what I term as „own” perspective. You can see on the table that „ good pay” and „can-do-attitude” received higher marks.

I can acknowledge the higher marks are very good for a functional and flexible management style to achieve innovativeness. Meaning that with very good coordination, a manager, can extract the „own” perspective of the employee to achieve innovation. Managerial view point and „own” perspective are intertwined with leadership, relationship and cultural style and management. These are basically the key elements to achieve innovation. Therefore, the assumption of a successful innovativeness was well integrated from the response gathered.

The employees of Vodafone Hungary believe that if you pay them good, they can give their best to the organization. However, good pay and can-do-attitude comes from the strategy

and structure of the organization. The employees' answers are in line with the literature where authors canvass issues of dynamics on innovativeness as organizational structures and management encapsulation. The notion prompts authors such as Mullins to identify what she called "Clusters of opportunities". Mullins wrote that organizations and management should identify their clusters through the resources, which diverse cultures play in to help enhancement of its capability. She also wrote that innovativeness encompasses the ability to nurture and use natural creativity, develop new ideas and bring them to life.

On the event, Mullins identified two main elements such as process of management and organizational context and people course of action which were in line with the survey. However, Schneider and Barsoux argued that organization culture as a preference point to evaluate the other and benchmark our output. Which means that no matter how the management and leadership of an organization is, what matters most is the output. The contrary argument of Schneider and Barsoux does not consider the answers from the employees „own” perspective but rather more focus was on managerial viewpoint. At some point too, the author puts culture at the heart core which boils down somehow to employees „own” perspective.

#### 4. CONCLUSION

As organizations strive in their quest for growth and profit making strategy, the managers are faced with numerous problems that are associated with the innovative strategy. Also, as the world becomes a global Market place, organizations need innovation to explore new markets, increase profits and achieve competitive advantage.

The study focused on the innovation as the driving force of successful company; however innovation is a function of robust management style that can face the drum beat of the modern days business climate which is a mix of leadership, relationship and cultural dimensions. These are seen in the coordination and operations of the organization. The management needs to properly integrate these dimensions into all areas of operations and make sure all stakeholders are involved in drafting these dimensions; otherwise it can have direct or indirect cost on the organization. Because innovation and management styling has many facets, it is worth studying and understanding to enable a company tap the potential of its employees and to achieve its objective and goal. Innovation is a direct link of technology and requires freedom from up to down structure. As a consequence, strategy mapping and structure within the organization create the technological empowerment, thereby drive innovation, that would lead to the organization success.

As effort to verify if these matters to top management, a semi-structured interview was conducted with three managers. Also, twenty questionnaires were distributed and collected from employees of Vodafone. The interview validation was a mixed report but the managers agreed that strategy and structure are very important elements, but management style is the key platform to build to achieve innovation. Their viewpoint is in line with the literature review. While, questionnaires distributed to the employees attracted higher answers on issues such as higher pay and can-do-attitude, including management strategy and structure as key to innovative solutions. The employees demonstrated that higher pay could lead to innovative output.

It is the responsibility of the management through its strategy and structure to harness the employees conscious and unconscious output, with a well coordinated, flexible and functional systems.

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## **CHAPTER 2**

### **Application of Specific Management Tools**



*Nemanja Berber, Milan Pasula, Milan Radošević*

## **2.1 PERFORMANCE MANAGEMENT IN FUNCTION OF DETERMINING INCENTIVE SYSTEMS FOR MANAGERS**

**Summary:** Performance management, a very important process of human resource management (HRM), can be significant basis for creating the incentive systems for managers. Big enterprises usually reward their chief executive officer (CEO) for success in business. In the past period the amounts of managers' rewards was not correlated with achieved performances of enterprises, so it was important to analyze amount of rewards given to the managers and methods that can be used to measure achieved managerial performances. Subject of this paper was the analysis of compensation systems for managers in ten most successful companies of the world and their relation with the business results presented through specific indicators of performances. In addition, the paper was subjected to the analysis of several methods of measuring performances that can be used in determining realistic amounts and structures of CEO rewards and incentives. The aim of this study was the presentation of the relation between managers' rewards and business performances and to find more objective methods for determining these rewards. Thus, compensation packages can meet the requirements of effectiveness and efficiency in terms of long-term goals and performances of business system.

**Keywords:** human resource management, compensations, incentives, performance management, methods for performance measurement

### **1. INTRODUCTION**

Performance management is a very important process of human resource management (HRM). It implies an assessment of current or previous results or performance of the employee, team or the whole organization. On such assessments companies create its policies in many business areas related to HRM: the need for staff training, new recruitment, rewarding, etc. In the area of rewards, performance measurement can be significant basis for creating the incentive systems for managers. Namely, big enterprises usually reward their CEO for success in business. Companies were often very generous in the reward practice for managers. But, in the past period, the amounts of managers' rewards was not correlated with achieved performances of enterprises, so it was important to analyze amount of rewards given to the managers and methods that can be used to measure achieved managerial performances.

Subject of this paper was the analysis of compensation systems for managers in ten most successful companies of the world and their relation with the business results presented through specific indicators of performances. Paper was subjected to the analysis of several methods of measuring performances that can be used in determining realistic amounts and structures of CEO rewards and incentives. The aim of this study was the presentation of the relation between managers' rewards and business performances and more objective methods for determining these rewards so that compensation packages can meet the requirements of effectiveness and efficiency in terms of long-term goals and performances of business system.

The paper is consisted from three parts. In the first part authors defined performance measurement and performance measurement system. Second part was related to the analysis of the performances in the 10 most successful companies from USA (according to the list of the magazine Fortune 500) and to the analysis of the compensations of the CEOs in those companies. Third part was dedicated to the presentation of the more comprehensive

measurement systems of performances that will be better solution for the determining and creation of the CEO compensations. There are explained BSC and EVA concept.

## **2. PERFORMANCE MANAGEMENT**

Performance measurement is an assessment of current or previous results of performance of the employee. Performance evaluation approach can be two fold - individual level and on exact data. First approach involves contact by type “face to face”; it is difficult for assessors because it activates emotions that can easily lead to conflict. Another approach focuses on the process of working that is based on exact data – results of the quantification and comparison with the standards (Štangl Šušnjar and Zimanji, 2005). PM in HRM can be made by different management methods such as management by objectives, multilaterally evaluation, bars, the method of critical events, ranking, essays, etc. Based on these established results, managers acquire the possibility of additional compensation by developing a system of benefits.

At the beginning of the analysis we have presented some often cited definition of performance measurement (PM) and performance measurement systems (PMS). According to Neely, Gregory and Plats (1995) performance measurement is defined as “the process of quantifying effectiveness and efficiency of actions”. One comprehensive definition of performance measurement is that PM is “the process of quantifying the efficiency and effectiveness of actions, in order to compare results against expectations, with the intent to motivate, guide and improve decision making” (Lardenoije, Van Raaij and Van Weele, 2005). Lebas (1995) characterizes performance management system as “the philosophy supported by performance measurement. It is the organization-wide shared vision, teamwork, training, incentives, etc. that surround the performance measurement activity”. PM system is “the set of metrics used to quantify the efficiency and effectiveness of actions, and the corresponding guidelines for linking these metrics to strategy and improvement” (Lardenoije, Van Raaij and Van Weele, 2005). The performance measures should be relevant, balanced, based on financial and non-financial indicators and related to internal and external stakeholders. Measures need to be related directly to the organization’s mission and objectives in order to reflect the company’s external competitive environment, customer requirements and internal objectives (Kennerley and Neely, 2002).

It is important to notice some contemporary researches made in relation to the importance of PM in modern business. Nudurupati, Bititci, Kumar and Chan (2011) have reviewed and tackled the evolution of the performance measurement field in the context of information systems and change management. According to Bititci, Garengo, Dörfler and Nudurupati (2011) concluded that in general the performance measurement field seemed to have developed in response to global and business trends. Also, many other researches have been made to explain PM and its implementation in each area of business: profit, non-profit, public, private, etc. In this paper, PM was analyzed as the base for managerial compensations.

## **3. PERFORMANCE MANAGEMENT AS THE BASE FOR CREATING MANAGERIAL INCETIVE COMPENSATIONS**

When it comes to the compensation for managers, performance management gets even bigger role. The current bureaucratic models of determining these systems had the impact on their low motivational force as well as on problems between the owners and managers in terms of high agency costs. The most analyzed problem was the correlation of compensations with the performances of managers. So far, many studies revealed that there is no strong correlation between these variables. For example, in the research of author Ozkan (2011, p. 260), it have been pointed out to a weak effectiveness of corporate governance



reports in the UK, which suggested that compensation for managers should be more closely linked with their performance. In one other research it was found that annual change in managerial compensation in the US during the 70s and 80s of the twentieth century to a large extent were not correlated with changes in corporate performances – the total compensation of managers have varied only \$3 to every \$1,000 change in shareholder wealth (Jensen and Murphy, 2010, p. 64). Since managerial compensations are very complex category of HRM, there have to be made changes in modelling incentive compensations. Adequate systems of compensation for managers should be structured on the basis of actual performance. Also, it would be necessary to determine the controllable and non controllable factors (in the sense of those factors that are in the power of manager).

If the long and short-term incentives for managers are in the question, a very interesting attitude was expressed by Malinić (2007) where he stated that:

- Short-term compensation should be based on standard financial indicators, such as profit (with variations to make it after tax, profit before tax and profit before interest and taxes), rate of return, cash flow, earnings per share and the like; and long-term compensation should be tied to several criteria that respect the long-term profitability; long-term position of the company and movement of the total shareholder returns (dividends and capital gains).
- Criteria for achieving long-term compensation imposed are the market value of companies, economic value added - EVA, market value added - MVA, the total shareholder return - TSR and others.

For the more comprehensive view of the performance measures and indicators in Table 1 there are summarized the indicators for the evaluation of the performance of the organization.

**Table 1: Performance management tools and indicators**

<b>PERFORMANCE MANAGEMENT TOOLS</b>	
<b>FINANCIAL INDICATORS</b>	<b>INDICATORS OF TOTAL PERFORMANCES</b>
Return on Investment (ROI)	Balanced scorecard (BSC)
Return on Assets (ROA)	
Return on Equity (ROE)	
Earnings per Share (EPS)	Tableau du Board (TdB)
Cash flow (CF)	Performance Prism (PPR)
Revenue (I)	
Profit (P)	Performance Pyramid System (PPS)
Total Shareholder return (TSR)	
Market Value Added (MVA)	
Economic Value Added (EVA)	Productivity Measurement and Enhancement System (ProMES)

Source: Malinić, 2007; Lardenoije, Van Raaij, Van Weele, 2005.

In order to show the level of compensation, their structure and relation to the performance, it has been made the analysis of performances of the top ten USA companies (according to Fortune 500) and its managerial reward packages. Table 2 and 3 presented the performance indicators (table 2) and the level and structure of CEO compensations (table 3) for 2010. All data in table 2 are gained from Fortune list 500 (<http://money.cnn.com>). For table 3 it has been used the research of Hay Group for 2010 (<http://www.haygroup.com>).

According to data in tables, it can be concluded next:

- Each company from table 2, except Bank of America and Fannie Mae, had a profitable business 2010 year. There has been noticed the growth of revenues and profits, accompanied with the growth of earning per share (EPS) from 2009 to 2010. For example, the growth of the revenue is between 3.3 and 32.6 % (Fannie Mae reached even 429.2%

higher revenue than in 2009), the growth of profit is between 5.6 and 141.5%. EPS growth was from 20.8 to 135.2%.

- Each company, except Bank of America and Fannie Mae, had positive indicators of ROA, ROE and ROI, which means that those companies have created return on assets, investments and equity. This can be explained as short-term gain for the company since all those indicators are related to the annual business and financial operations.
- Companies reward their CEO with different elements of compensations, but it can be concluded that main are: base salary; annual incentives; long term incentives – stock options grants, restricted stock grants, performance-based grants in equity and cash; all other compensations (perquisites, personal benefits, tax gross-ups, discount stock purchases); change in nonqualified deferred compensation earnings plus change in pension value.
- Basic salary is the smallest part of the total compensations, and it estimates from 6.97% (in Wall Mart) to 16.8% (in General Electric) of total compensations. In companies that did not create long and short-term incentives, salary is the biggest or even the only element of the compensations (Berkshire Hathaway and General Motors). Basic salary is determined by the working contract between managers and companies, and it is fixed amount that is paid with no relation to the performances.
- Annual incentives are usually double or even several times bigger than salary. These incentives are paid in almost each company where have been created positive business result, profit and performance indicators of ROA, ROE, ROI and EPS. In Bank of America annual incentives were not paid since that corporation realized loss in 2010 of \$-2,238 millions. Annual incentives are usually paid for the short time period.
- Long-term incentives have reached level from 58% to 74% of total compensations, with the exception of General Electric Company (LTI are only 22% of total compensations). Long-term incentives are differently used in each company. The most used are stock options, restricted stocks and performance based equity grants. The performance based cash grants were used only by one company. In addition, five companies form the Table 3 used two LTI elements in rewarding its CEO - stock options and performance based equity grants. Last five companies decided to give to the CEOs only one LTI incentive - restricted stock grant.
- Related to the long term incentives is also the tendency of rewarding CEO with more deferred compensations. Namely, performance based cash grants were used only in General Electric Company. All other companies gave to the CEOs compensations in form of capital – equity and stocks. For example, restricted stocks were given as compensation in four out of ten companies. Stock options were used in four cases.
- Since the economic crisis had affected the business and economy in many world countries, wastefully CEO compensation models became untenable. HR managers are trying to create models that will be enough motivating but also sustainable in means of real business performances. The goal of any compensation system should be to attract, motivate and retain the best managers, while at the same time being fair to the shareholders.

**Table 2: The performances of the 10 most successful companies from the list of Fortune in 2010**

R	Company	Key financial elements in millions of \$							Pr (%)	ROA (%)	ROE (%)	EPS			ROI	
		Revenues	% change from 2009	Profits	% change from 2009	Assets	Stockholders' equity	Market value (3/25/2011)				2000-2010 Annual growth (%)	2010 \$	% change from 2009	2000-2010 Annual rate (%)	2010 (%)
1	Wal-Mart Stores	421,849	3.3	16,389	14.3	180,663	68,542	182,764	3.9	9.1	23.9	12.3	4.47	20.8	1.4	3.2
2	Exxon Mobil	354,674	24.6	30,460	58	302,510	146,839	414,638	8.6	10.1	20.7	9.5	6.22	56.3	7.7	10.1
3	Chevron	196,337	20.1	19,024	81.5	184,769	105,081	214,355.5	9.7	10.3	18.1	9.1	9.48	80.9	11.6	22.9
4	ConocoPhillips	184,966	32.6	11,358	133.8	156,314	68,562	116,812.3	6.1	7.3	16.6	7.7	7.62	135.2	12.2	38.8
5	Fannie Mae	153,825	429.2	-14,014	N.A.	3,221,972	-2,599	447.9	-9.1	-0.4	N.A.	N.A.	-3.81	N.A.	-42.1	-74.6
6	General Electric	151,628	-3.3	11,644	5.6	751,216	118,936	209,715.2	7.7	1.6	9.8	-1.8	1.06	5.0	-6.3	23.9
7	Berkshire Hathaway	136,185	21.1	12,967	61	372,229	157,318	210,787.5	9.5	3.5	8.2	13.8	7.0	52.7	5.4	21.4
8	General Motors	135,592	29.6	6,172	N.A.	138,898	36,180	49,116.6	4.6	4.4	17.1	N.A.	2.89	N.A.	N.A.	N.A.
9	Bank of America	134,194	-10.8	-2,238	-135.7	2,264,909	228,248	135,016.2	-1.7	-0.1	-1.0	N.A.	-0.37	N.A.	-1.7	-11.2
10	Ford Motor	128,954	9	6,561	141.5	164,687	-673	55,715	5.1	4.0	N.A.	-3.2	1.66	93.0	-1.2	67.9

Source: <http://money.cnn.com> (systematized data according to the list of Fortune 500)

**Table 3: CEO compensations of the 10 most successful companies from the list of Fortune in 2010**

R	Company	Elements of total compensations for CEO in (000 \$)											
		Salary	An. incentives	Long term incentives (000\$) - LTI				Total direct compensations	Change in Nonqualified Deferred Compensation + Change in Pension Value	All Other Compensation	Total Compensation	Total Realized LTI	3-Year Realized Total Direct Compensation
				Stock option grants	Restricted stock grants	Performance Based Grant Equity	Performance Based Grant Cash						
1	Wal-Mart Stores	1,232.7	3,852.1	0	3,347.5	9,304.9	0	17,737.1	499.1	476.6	18,712.7	17,592.8	N.A. <sup>6</sup>
2	Exxon Mobil	2,207.0	3,360.0	0	15,465.4	0	0	21,032.4	7,476.3	443.9	28,952.6	7,989.7	33,000.2
3	Chevron	1,479.2	3,000.0	5,535.2	0	3,752.4	0	13,776.8	2,273.3	220.5	16,260.5	3,101.7	N.A.
4	ConocoPhillips	1,500.0	4,252.5	5,737.7	0	6,148.6	0	17,638.8	0	294.1	17,932.9	9,566.3	36,299.1
5	Fannie Mae	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
6	General Electric	3,300.0	4,000.0	7,400.0	0	0	4,950.0	19,650.0	6,339.0	389.8	26,378.8	1,933.1	25,093.6
7	Berkshire Hathaway	100.0	0	0	0	0	0	100.0	0	429.9	524.9	0	300.0
8	General Motors	2,333.3	0	0	666.7	0	0	3,000.0	0	194.1	3,194.1	0	N.A.
9	Bank of America	950.0	0	0	9,050.0	0	0	10,000.0	719.8	270.2	10,990.1	1,039.3	N.A.
10	Ford Motor	1,400.0	9,450.0	7,500.0	0	7,492.5	0	25,842.5	0	678.0	26,520.5	9,298.0	25,888.0

Source: <http://www.haygroup.com> (systematized data according to the list of CEO compensations survey 2010)

<sup>6</sup> Data not available

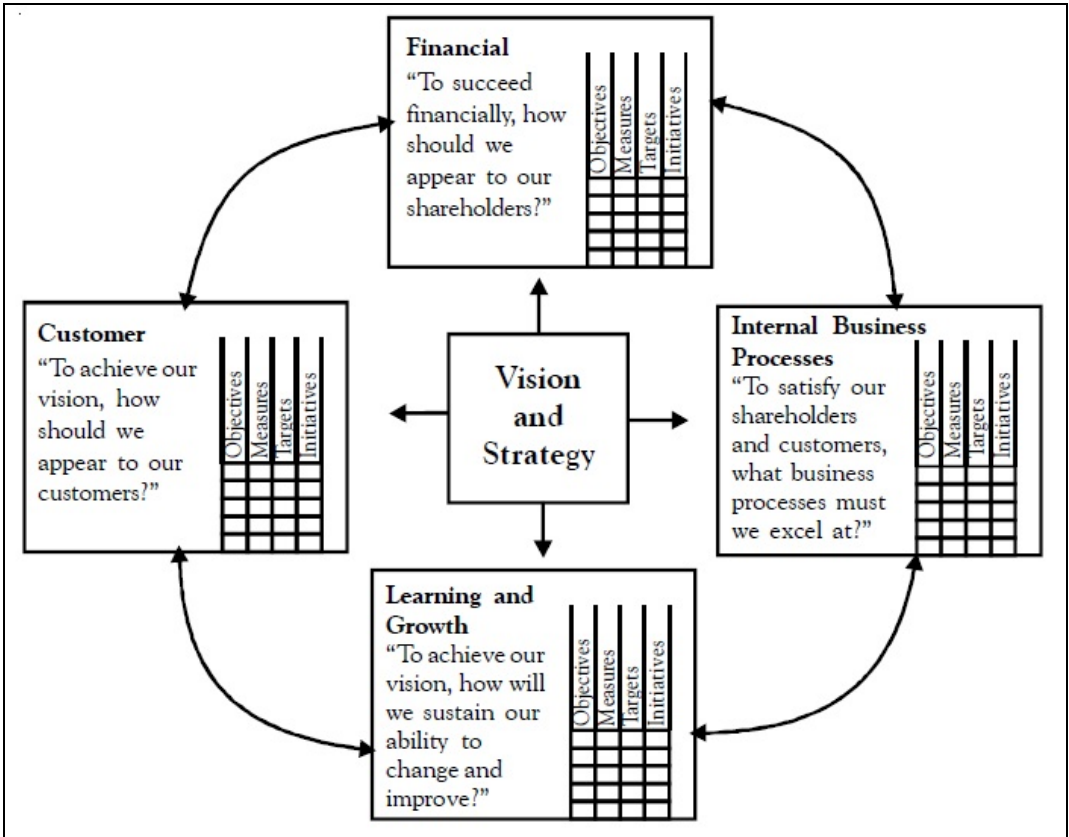
After the Tables 2 and 3 are discussed, it can be concluded that there are many issues related to the amount and structure of CEO compensation. These remunerations should be based on outcomes and total business performances of the company. Since only financial indicators are not suitable for the total compensation system, it should be mentioned some other performance measurement model in practice that could be linked to this problem. From all models presented in Table 1, BSC and EVA were found as the performance measurement models that can be used in function of efficient and effective CEO compensation systems.

**4. PERFORMANCE MEASUREMENT SYSTEMS FOR CEO INCENTIVE COMPENSATIONS IN PRACTICE**

**4.1. THE BALANCED SCORECARD (BSC)**

One of the best-known performance measurement system is the balanced scorecard (BSC), developed by Kaplan and Norton (1992; 1996; 1996a). Kaplan and Norton (1996a) define the BSC as “a multidimensional framework for describing, implementing and managing strategy at all levels of an enterprise by linking, through a logical structure, objectives, initiatives, and measures to an organization’s strategy”.

*Figure 1: Balanced Scorecard (BSC)*



Source: Kaplan and Norton, 1996, p. 76

BSC complements the traditional financial performance measures with three non-financial key performance indicators (KPIs) which are presented in Figure 1:

- financial perspective that is typically related to profitability;
- customer perspective that includes several generic measures of successful outcomes from the company – customer satisfaction, market share;

- internal processes that focuses on the internal processes that will have the greatest impact on customer satisfaction and on achieving the organization’s financial perspectives;
- learning and growth – the infrastructure of the organization has to build and manage to create long-term growth and improvement through people, systems and organizational procedures, is identified in this perspective (Lardenoije, Van Raaij and Van Weele, 2005).

Since Silk (1998) estimated that 60% of Fortune 1000 companies in the USA have had experienced BSC, there is a need of analyzing this performance measurement model in function of CEO compensations. Pollanen and Xi (2011) had investigated the use of BSC measures in executive compensation plans, particularly its performance consequences, and the fit between the use of BSC and firm characteristics. The findings underscored the importance of firm characteristics in the design and use of performance measurement and reward systems. Also, Creamer and Freund (2010) analyzed the BSC and one of the most important parts of its dataset was CEO compensations. They demonstrated how the boosting approach can be used to define a data driven board BSC with applications to 500 biggest USA companies.

According to Purcell (2011, p. 7) “board is at the apex of a company’s internal incentive structure and it is the board’s decisions that shape the incentives culture for the whole organization and determine whether or not virtue – or its opposite – will be rewarded”. Boards must give enough weight to the intangible aspects of executive compensation, and not simply evaluate executive compensation in purely financial terms. Purcell emphasized that boards need to “incorporate the intangible drivers of responsible behaviour into a balanced scorecard gate opener for executive rewards to be triggered”.

**Table 4: Executive compensation systems according BSC dimensions**

<b>Category</b>	<b>Measure</b>	<b>Weighting</b>
<b>Financial (60%)</b>	EVA	25%
	Unit Profit	20%
	Market Growth	15%
<b>Customer (20%)</b>	Customer satisfaction survey	10%
	Dealer satisfaction survey	10%
<b>Internal Process (10%)</b>	Above average rank on industry quality survey	5%
	Decrease in dealer delivery cycle time	5%
<b>Innovation and Learning (10%)</b>	Suggestions/employee	5%
	Emp. satisfaction survey	5%

Source: Jones (2009)

Without further literature analysis, in Table 4 it has been presented the example of CEO incentive compensation designed according to BSC. Jones (2009) claimed that CEO paid bonus percentage should be tied to the percentage of exceeding performance targets. From Table 4 it can be seen that main part of the CEO bonus should be related to its financial performances, measured by EVA, unit profit and market growth (60% of total earned bonus is consisted from financial indicators). The rest of 40% is related to customer’s indicators (20%), indicators of internal processes (10%) and indicators of learning and innovation (10%).

## 4.2. ECONOMIC VALUE ADDED (EVA)

About the importance of EVA in function of increasing shareholder value there have been done many studies (Zakić, Vunjak, Bešić, Simić, 2012; Ilić, 2010; Ilić, 2009; Malinić, 2007; Balsley, 2005; Evans and Evans, 2002; Young and O’Byrne, 2001; Stern, Shiely, Ross, 2001; Wallace, 1997). EVA is defined as the change in the NOPAT (Net Operating Profit after Taxes) minus the change in the Cost of the Capital used to generate this NOPAT (Kumar and Kaura, 2002; Sharma and Kumar, 2010). EVA depends basically on the firm operating profit, taxes, debt level, and the cost of capital. EVA directs attention of the company or its managers on the value creation for shareholders. It suggests that managers focus on the question whether a company creates a yield above the cost of capital and thus help managers to analyze the reasons for the changes that are introduced. Therefore, in recent years the economic value added is often used as a basis for the establishment of a compensation system to motivate managers, so they behave in a manner that ensures the creation of shareholder value (Anđelković and Pešić, 2005, p. 54).

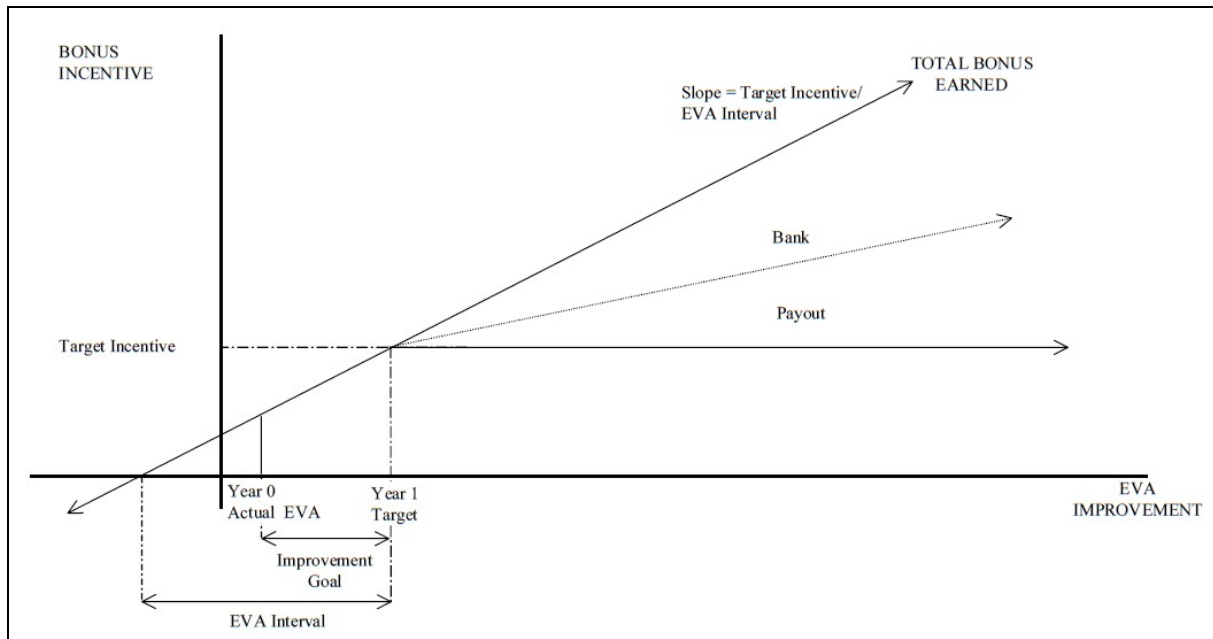
EVA can provide investors with a normal return on the company’s shares—that is important not only for securities analysts in evaluating stocks, but also for corporate compensation committees in setting performance standards for management incentive compensation plans (O’Byrne, 1996). An examination of the compensation structure and economic value added of 209 companies in 1995 – 1998 provided evidence supporting incentive compensation where EVA is found to be positively and significantly related to incentive based compensation (Evans and Evans, 2002). Also, Dinu and Ciora (2012) in their research have presented the implementation of EVA as value based management technique for incentive compensation. Namely, EVA bonus plan measures excess EVA improvement as opposed to simply EVA growth over prior periods. It provides a more direct link to the true measure of shareholder wealth creation – returns above market expectations (Young and O’Byrne, 2001). Following formula can be used to calculate CEO bonus in each year:

$$\text{Current Year Bonus} = \text{Target Bonus} + y\% (\Delta\text{EVA} - E_i) \quad (1)$$

Target bonus is “the bonus earned by a manager for delivering the EVA improvement that is expected by investors. This expected EVA improvement should be equivalent to the EVA that will provide shareholders with a cost of capital return on the market value of their investment in the business” (Balsley, 2005). If EVA is below this level bonuses will be reduced while returns of shareholders do not fall to zero. At this level there will be no bonuses for managers.  $\Delta\text{EVA} - E_i$  represents “the change in EVA less expected EVA improvement. This is meant to capture the incremental EVA that a manager has delivered above and beyond the EVA growth that investors expect and have already paid for. The percentage of the incremental performance that is returned to management (y) is established by the compensation committee” (Balsley, 2005).

Additional incentives beyond the level of the target bonus are provided for increasing the EVA above the level provided by covering the total cost of capital and only the part of EVA that is increased above the expected level. In this way it will be prevented the excessive increase of compensation costs. If the criteria for bonuses was any increase in EVA, then there will be situations in which one reached EVA (above the level that provides target bonus) is decreasing, which is usually accompanied by a decline in value of shares and managers will still exercise bonuses over target level (Malinić, 2007). Because of this, Stern Stewart & Co proposed the use of a “bonus bank” designed to base a manager’s annual bonus payout on multi-period EVA delivery (presented in Figure 2).

**Figure 2: EVA bonus bank**



Source: Desai, Ferri, Treadwell, 2006, p. 20

According to bonus bank concept:

- In every year, the “current year bonus” is calculated using the formula described above and based on the manager’s performance during that year.
- That “current year bonus” is then placed in a “bonus bank” that also holds the deferred (or unpaid portion of) bonuses from prior years.
- The bonus bank balance (after the current year bonus has been included), rather than the current year bonus, then determines the amount of bonus actually earned by a manager each year. The amount earned is determined in two steps:
  - first, 100% of the bonus bank (if possible) is paid up to the amount of the target bonus;
  - second, plus 1/3 of the remaining bonus bank (after the target bonus) (Balsley, 2005).

**Table 5: Hypothetical example of the EVA bonus**

	<b>Business Unit 1</b>	<b>Business Unit 2</b>	<b>Business Unit 3</b>
Beginning of period EVA (\$)	20,000,000	40,000,000	10,000,000
End of period EVA (\$)	30,000,000	50,000,000	12,000,000
<b>Incremental EVA Delivered ( \$)</b>	<b>10,000,000</b>	<b>10,000,000</b>	<b>2,000,000</b>
<b>Expected EVA Improvement ( \$)</b>	<b>5,000,000</b>	<b>10,000,000</b>	<b>5,000,000</b>
Target Bonus (\$)	100,000	100,000	0
<b>Incremental Bonus (\$)</b>	<b>2% * (10 - 5)</b>	<b>2% * (10 - 10)</b>	<b>2% * (2 - 5)</b>
Bonus for EVA Improvement beyond Shareholders Expectations	100,000	0	-60,000
<b>Total CEO Bonus</b>	<b>200,000</b>	<b>100,000</b>	<b>-60,000</b>

Source: Balsley, 2005 (adjusted)

Table 5 presented an example of calculating bonus compensation for the manager in accordance with the methodology of EVA. In the first case, business unit 1, if manager succeeds to create improvement of EVA (in table 5 this was \$10,000,000) above the

expectation of shareholders (which was \$5,000,000) he will get two parts of total bonus. First, manager will get \$100,000 of target bonus since he succeeded to increase EVA to the shareholder's expectation. Second, manager will be granted with another \$100,000 since he improved EVA above expectations (over \$5,000,000 in this example). According to author Balsley (2005), if the manager realizes an increase above the expectations of shareholders, he wins percentage of incremental increase which is usually about 2-3% of incremental increase. In this example, the incremental increase is \$ 5,000,000 (\$ 10 million total increase minus the expected increase of \$5,000,000 from shareholders) and 2% of \$5,000,000 estimates \$100,000. Adding these two amounts, manager gets the bonus of \$200,000. If manager succeeds to increase EVA only to the level of shareholder's expectations (business unit 2 from table 5) he will get only target bonus (\$100,000). If EVA is below shareholder's expectations, bonus will not be paid at all (example of business unit 3).

**Table 6: Hypothetical example of the EVA bonus bank concept**

<b>Business Unit 1</b>	<b>First year</b>	<b>Second year</b>	<b>Third year</b>
Beginning of period EVA (\$)	20,000,000	40,000,000	10,000,000
End of period EVA (\$)	-30,000,000	46,000,000	13,000,000
<b>Incremental EVA Delivered ( \$ )</b>	<b>10,000,000</b>	<b>6,000,000</b>	<b>3,000,000</b>
<b>Expected EVA Improvement ( \$ )</b>	<b>5,000,000</b>	<b>5,000,000</b>	<b>5,000,000</b>
Achieved Expected EVA Improvement?	yes	yes	no
<b>Target Bonus ( \$ )</b>	<b>100,000</b>	<b>100,000</b>	<b>0</b>
<b>Incremental Bonus - IB ( \$ )</b>	<b>2% * (10 - 5)</b>	<b>2% * (6 - 5)</b>	<b>2% * (3 - 5)</b>
Bonus for EVA Improvement beyond Shareholders Expectations	100,000	20,000	-40,000
<b>Total CEO Bonus</b>	<b>200,000</b>	<b>120,000</b>	<b>0</b>
<b>Total CEO Year Bonus</b>	<b>200,000</b>	<b>186,667</b>	<b>0</b>
<b>CEO Bonus Paid</b>	<b>100,000 + 1/3 IB</b>	<b>100,000 + 1/3 IB</b>	<b>100,000 + 1/3 IB</b>
	<b>133,333</b>	<b>128,889</b>	<b>0</b>
<b>Ending Bonus Bank</b>	<b>66,667</b>	<b>57,778</b>	<b>17,778</b>

Source: Author's calculation according to the example of author Balsley, 2005.

Since the economic crisis underscored the problems of irrational compensation for managers, the concept of EVA can be used in function of reducing wasteful bonuses. Although *EVA bonus* is more sophisticated method for creating managers bonus, it is also important to describe *EVA bonus bank* with one hypothetical example. Specifically, in table 6 it has been shown that the use of formula for bank bonuses by EVA enables deferred payment of bonuses to managers (e.g. for three years). Bonus that is earned in one fiscal year is the sum of the target bonus that the manager receives if it makes EVE increase over shareholders expectations and percentage of incremental bonus (described in table 5). Table 6 presented manager's bonus payment after making \$200,000 in total, using the formula for the bonus bank. Namely, target bonus is paid in total (in this example target bonus is \$100,000) while the remaining part of the bonus (incremental bonus) is paid up to 1/3 of total amount (1/3 of \$100,000). In this way, manager gets \$133,333 (\$100,000 of target bonus plus \$33,333 of incremental bonus) instead of \$200,000, and the remaining incremental bonus of \$66,667 is located in the bank bonus for the next period. If business manager in the coming period doesn't achieve EVA increase equally with or above the expectations of shareholders, the bonus will not be paid. The value of the bank bonus will be transferred in the next period,



which can be a source of motivation for the manager to increase bonus bank amount, and thus the payment of bonuses for the next year. In table 6 it can be seen that bonus bank in first year is \$66,667. For the second year, manager succeeded the increase of EVA again above the shareholder's expectations, but in smaller amount (\$1,000,000 above expectations). The total bonus is calculated in the same way, \$100,000 target bonus plus percentage of incremental bonus (in this case it is 2% of \$1,000,000 which estimates \$20,000). Total bonus for second year is \$120,000, but since bonus bank contained the rest of incremental bonus from first year, \$66,667, total bonus bank is \$186,667 (\$100,000 of target bonus and \$86,667 of banked incremental bonus). According to the methodology of EVA bonus bank, payment will be \$128,889 (\$100,000 plus 1/3 of \$86,667). The rest of \$57,778 is placed in bonus bank for the next year. In third year, manager has not increased EVA up to expectations of shareholders, so bonus was not paid, and the amount of bonus bank was reduced for the percentage of incremental loss (2% of -\$2,000,000). After reducing bonus bank for \$40,000 the rest for the next (fourth) year is \$17,778.

## 5. CONCLUSION

Incentive systems for managers are very complex area of HRM. A mixture of compensations elements, importance of short and long – term incentives for managers and problem of rewarding in the past make this issue more sophisticated. Usually, executive compensations was weakly correlated or even no correlated with the achieved performances. Because of these issues and problems, there is a need for improvement in the design of managerial compensations. Conclusions of this paper are:

- Main elements of CEO compensations are: base salary, annual incentives, long term incentives, all other compensations, change in nonqualified deferred compensation earnings plus change in pension value.
- Basic salary is the smallest part of the total compensations in companies that rewarded its managers with diversified compensation package, and it estimates from 6.97% to 16.8%.
- Annual incentives are usually double or even several times bigger than salary. These incentives are paid in almost each company where have been created positive business result and performance indicators of ROA, ROE, ROI and EPS.
- Long-term incentives have reached level from 58% to 74% of total compensations. The most used are stock options, restricted stocks and performance based equity grants. Related to the long term incentives is also the tendency of rewarding CEO with more deferred compensations.
- Since there are a need of implementing holistic performance measures for defining basis for manager's incentives, authors decided to analyze two measures: BSC and EVA concept.
- One of the best known performance measurement systems is the balanced scorecard that provides an enterprise view of an organization's overall performance. According to BSC, CEO paid bonus percentage should be tied to the percentage of exceeding performance targets, so main part of the CEO bonus will be related to its financial performances, measured by EVA, unit profit and market growth (60% of total earned bonus). The rest of 40% will be related to customer's indicators (20%), indicators of internal processes (10%) and indicators of learning and innovation (10%).
- EVA incentive compensations are based not only on the year increase in EVA, but on the increase that is above expected EVA improvement. Bonus bank is usually used to motivate managers to make decisions that will create superior performances and value for the shareholders continuously. This method will connect results of managers to the deferred bonus payout (payout will be set in defined time period, for example three years).

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*Katarzyna Piwowar-Sulej*

## **2.2 IT TOOLS TO SUPPORT KNOWLEDGE MANAGEMENT IN THE PERSONNEL RECRUITMENT AND SELECTION PROCESS**

**Summary:** The personnel recruitment and selection (R&S) process has a fundamental value to an organisation. During the process the following information is gathered: the situation on the labour market, the candidates' features, and expectations towards an employer. The collected and properly processed information becomes the base for developing specific knowledge. It is worth mentioning that the use of this knowledge does not refer to the mere employment of a suitable individual, it can also constitute the basis for implementing changes in particular elements of the HR function.

The above suggests that there is a need for conscious and consistent knowledge management in the area of R&S. It has been accepted that knowledge management includes performing a cycle of actions, such as gaining knowledge, storing knowledge and implementing changes on the basis of that knowledge. Knowledge management should be "accompanied" by the use of IT tools that are becoming increasingly important in the process of collecting and processing data.

Considering the abovementioned facts, it has been agreed that it is worth considering the possibility of using IT tools in the process of managing knowledge – at the stage of R&S. The scope of their usage has been presented based on the results of empirical research conducted in 2011 among 96 large companies located in Poland.

**Keywords:** recruitment, selection, knowledge management, IT tools

### **1. INTRODUCTION**

The personnel function (HR function) is one of the integral functions present in every organisation and refers to the activities related to the employees and their issues; their essential components include: personnel recruitment and selection (R&S), placement, development, remuneration and promotions (see Gableta, 2003, p.165).

One may argue that the personnel recruitment and selection process has a fundamental value to the organisation. Recruitment is connected with attracting job candidates for the purpose of future selection. Selection is a series of activities aimed at assessing competencies of candidates and choosing, based on predefined criteria, a suitable person for particular vacancy. As the result of R&S an organisation has adequate human potential. During the process, the following information is gathered: the situation on the labour market, the candidates' features, and expectations towards the employer. Some information is linked to the R&S process (e.g., the effectiveness of the method used).

The collected and properly processed information becomes the base for developing specific knowledge. It is worth mentioning that the use of the knowledge does not refer to the mere employment of the suitable individual. Additionally, this knowledge can constitute the basis for implementing changes in particular elements of the HR function.

The above suggests that there is a need for a conscious and consistent process of gathering information during the process of R&S as well as a wider outlook on the potential possibilities of applying this knowledge. The solution is the concept of knowledge management.

The term knowledge management is not unambiguous. In many reference books, there are a large number of knowledge management definitions. According to W. Grudzewski and I. Hejduk, it is contingent upon two factors: high interest in that subject and relatively short period of conducted scientific discourse, which hinder synthetic interpretation of the so far

achievements (Grudzewski, Hejduk 2005, [ww.e-mentor.edu.pl/artykul/index/numer/8/id/115](http://ww.e-mentor.edu.pl/artykul/index/numer/8/id/115), 08.07.2012).

Generally, the essence of knowledge management comes down to creation of possibility of obtaining the influence on the resources of knowledge in organisation (Rey, Maassen, Gadeib, Bruecher, 1998, p. 30). It has been accepted that knowledge management includes performing a cycle of actions, such as gaining knowledge, storing knowledge and implementing changes on the basis of that knowledge. Knowledge management is a process in which there is certain sequence of actions and specific relations between various kinds of actions.

Knowledge is defined as ‘information combined with experience, context, interpretation and reflection’ (Davenport, Long, Beers, 1977, p. 1). The definition implies that man is the only subject of developing knowledge, because man is the only resource of the organisation capable of learning, developing potential and conceptual thinking. However, knowledge management should be “accompanied” by the use of IT tools.

In the current economic reality, the ‘minute competitiveness’ model has become dominant giving economic opportunity only to those companies that are able to analyse the incoming information streams faster and more efficiently (Kozłowski, 2007, p. 46). As it is pointed out by A.K. Koźmiński, knowledge-based organisations have to create very specific and sophisticated information environment. Information processes have to be conducted in the environment of the most advanced information technology including both hardware and software. Beyond such environment, the knowledge cannot be the most productive resource of an organisation (Koźmiński 2008, p. 15).

IT tools are becoming increasingly important in the process of collecting and processing data. The main benefit resulting from applying such tools is shortening the R&S time through facilitating the communication process with the candidate and the workflow among all the individuals involved in the process. Employees responsible for software development in a company providing, amongst others, systems for HR departments claim that these applications should now be used to support the HR policy, with a particular focus on R&S (<http://gospodarka.gazeta.pl/gospodarka/1,52741,4185707.html>, 19.10.2011).

Considering these, it has been agreed that it is worth considering the possibility of using the IT tools in the process of knowledge management – at the level of personnel recruitment and selection<sup>7</sup>. These tools have been related to particular stages of the knowledge management cycle. The scope of their usage has been presented based on the findings of empirical research conducted in 2011 among 96 large companies located in Poland. The research used the quota selection according to industry<sup>8</sup>. They were performed within the ‘Internship as the Scientist’s Success’ project, financed by the European Social Fund. The respondents were HR employees actively involved in the personnel recruitment and selection process.

Results of previous own research conducted in 2009 are also used in the article. There were used the telephone interviews with HR specialists, working in 100 medium and large-sized, randomly selected companies located in Poland, operating in production, financial and IT sectors. The research problem was identification of the scope of application and indication of the most popular psychometric tools for selection of job candidates.

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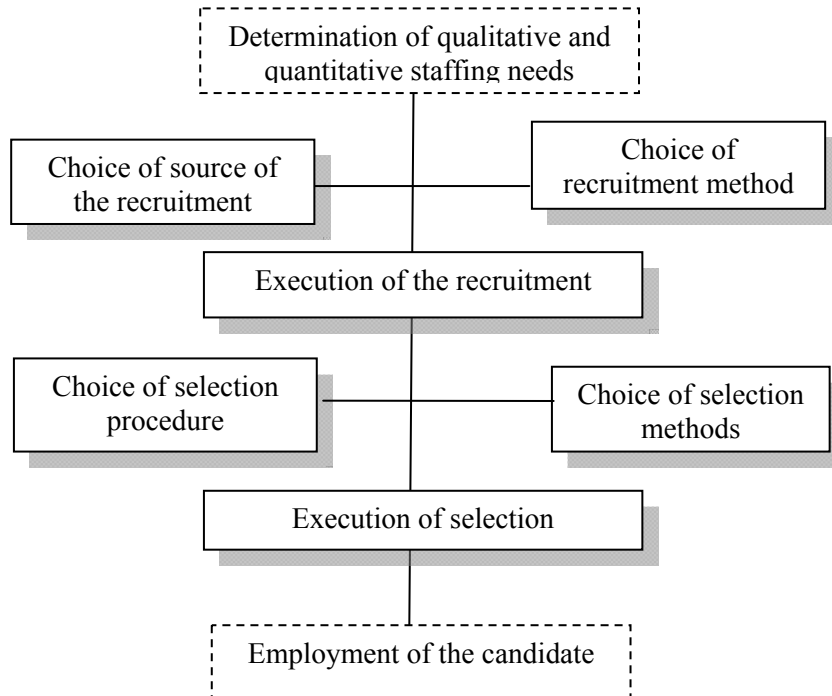
<sup>7</sup> It refers to commercial tools adjusted to the needs of a particular enterprise. These IT solutions can be delivered by a software development company or developed internally. The subject therefore excludes functionalities offered by some job portals.

<sup>8</sup> Quota selection was based on the proportions featured in the report referring to a separate study, conducted by PKPP Lewiatan in cooperation with Deloitte ([http://www.muratorplus.pl/biznes/raporty-i-prognozy/kondycja-duzych-firm-w-polsce-w-czasach-kryzysu\\_64588.html](http://www.muratorplus.pl/biznes/raporty-i-prognozy/kondycja-duzych-firm-w-polsce-w-czasach-kryzysu_64588.html), 19.10.2011).

## 2. KNOWLEDGE MANAGEMENT IN R&S PROCESS

Before the idea of knowledge management in relation to R&S is presented, it is worth to discuss shortly the components of R&S process (see Fig. 1).

*Figure 1: Process of personnel recruitment and selection*



Source: own work on the basis of (Marketing kadrowy; 1997, p. 57)

Actions presented in above figure must be preceded by identification as regards the number of vacancies and by determination of qualitative requirements for job applicants. The so-called desired profile of job candidate is created.

Before the announcement on the existing vacancy is made, there must be decision made, concerning the selection of the source of the recruitment. There are the following sources discriminated: internal (internal labour market) and external (external labour market). Both of mentioned sources have some advantages as well as the disadvantages. (For more, see Suchar, 2005, p. 29). At the recruitment stage, it is essential to make decision concerning not only the source but also the method. The method is a manner in which the candidates learn about the offered job position.

To examine if a particular candidate meets the criteria included in previously developed profile of requirements, the stages of selection must be adequately designed using those techniques, which enable the best possible assessment of job candidate traits. R&S process should result in employment of the job candidate with traits which are the most convergent with previously set requirements.

Effective execution of R&S process must be accompanied by the use of specialist knowledge in the field of instruments used in HR area (R&S methods and techniques) and the use of knowledge of the labour market and the job applicants. In addition, the significant role is played by the knowledge of creation of employer's image that means creation of relations between the employer and present or future employee.

Only the knowledge, which is useful in operation, is important for an organisation. To make it happen this way, the specific knowledge (regardless of its content) should concern two matters: causalities existing within the organisation and in relations between the

organisation and its environment (Argirys, 1993, p. 3; Dixon, 2000, p. 11 cited by Godziszewski, 2006, p. 117). That condition is met by the categories of knowledge presented in the above paragraph.

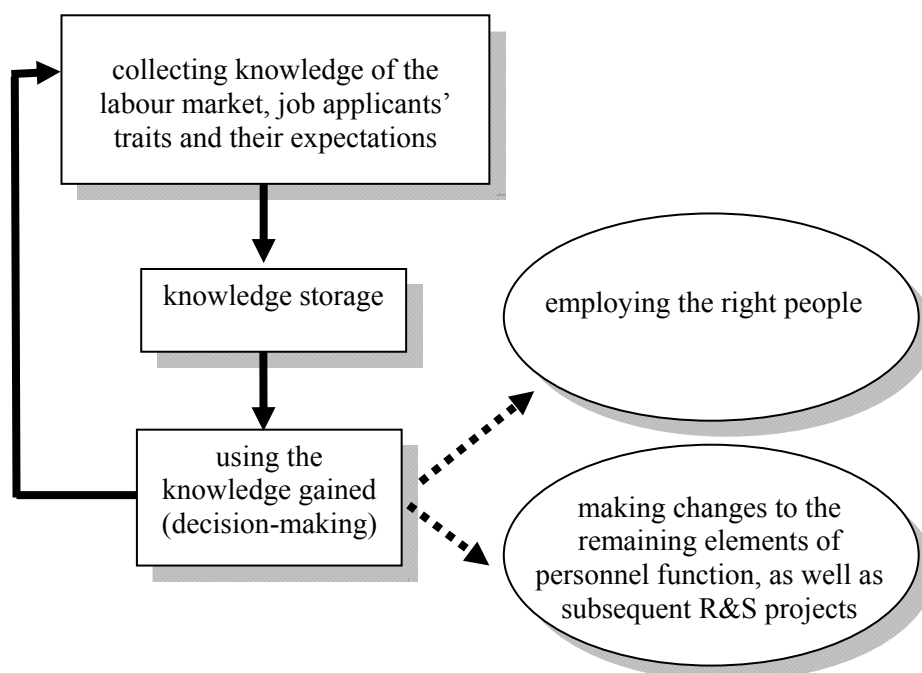
As it was indicated in the introduction, these are not the professional competencies of HR specialists, which is the subject of interest in this paper, but it is the knowledge from the labour market. Then, with such assumption, what is the meaning of knowledge management in R&S process?

As shown in the introduction to this study, it is assumed that knowledge management is connected to completing the cycle presented in Fig. 2. The stages of knowledge management, which are contained in the figure, can also be related to the different kinds of knowledge occurring in a company. Generally, knowledge management should be considered by paying attention to:

- the functioning of the whole organisation,
- the functioning of the particular organisational units,
- the cross-organisational processes, i.e. through the different organisational units.

Therefore it should be emphasized that knowledge management at the R&S level should be a part of the overall system of knowledge management in a company.

**Figure 2. The cycle of knowledge management in the personnel recruitment and selection process and the results of completing this cycle**



Source: own work

Managers of the enterprises may choose one of the two strategies of knowledge management: codification strategy (technology-oriented) or personalisation strategy (human-oriented) (for more, see Błaszczuk, Brdulak, Guzik, Pawlaczuk, 2003, pp. 26-27). Those aforementioned types of the strategy are directly connected with the increase of the particular types of the knowledge: the first type – with the increase of formal (explicit) knowledge, the second type – with the increase of tacit knowledge. The first one is presented in the form of procedures, records or numerical presentations, as a result of information processing. The second one is the resource constructed upon the basis of experience, skills and intuition of the employees of the enterprise. The main advantage from using the codification strategy is the economy of knowledge reuse (see Fic, 2008, p. 25). In knowledge management process, it is

justified to combine elements of the aforementioned strategies because it leads to the increase of both types of the knowledge used in company operation.

According to the definition proposed by the Institute for Production System and Design Technologies in Berlin, knowledge management describes the methods, instruments and tools which in a holistic approach contribute to the course of the main processes with a part of the knowledge (more see Mikula, 2001, p. 59). These methods or tools can be generally divided into those which:

- a. allow the processes contained in the cycle of knowledge management to be automated,
- b. fall into the “human resources management” category, effecting a change to the personnel’s attitude towards knowledge.

Information technologies belong to the first group mentioned above.

### **3. THE POSSIBILITY OF USING THE IT TOOLS IN ANALYSED AREA**

When considering the general reasons of using IT tools in the process of personnel recruitment and selection, there must be mentioned the benefits that may be achieved by the business entity through those tools. Those benefits undoubtedly include (Piwowar-Sulej, 2012, p. 550):

- increase of the operation speed and thus, shortening of the time necessary for execution of R&S process also by improvement of communication with a candidate and the workflow between persons involved in the process,
- elimination or decrease of number of mistakes made by personnel specialists in the analysed process,
- ease of generation of reports on the status of personnel selection projects,
- decrease of costs of R&S by automation of the actions which would have to be performed by the additional employees
- coping with the fluctuation of the number of recruitment projects.

The aforementioned arguments supporting the use of information technology in personnel recruitment and selection are quite „hard”. However, it is worth to look at the IT tools not only from the employer’s point of view. Also the expectations of present and potential employees have to be taken into consideration.

IT tools facilitate making everyday operations for the employers in HR departments. Moreover, the systems of group work also make the execution of R&S easier to the other internal parties involved – i.e. to line managers. Thus, IT tools „fall in line” with the idea of the so-called *high performance work places* (for more, see. Wojciechowska, 2008, pp. 66-68). The employee satisfied with the equipment of his work post will probably tell his family and acquaintances about that, causing dissemination of positive information concerning the employer.

Also generational changes are worth to be taken into consideration. Representatives of the so-called generation Y have entered the labour market for several years. They show the proficiency in the use of modern technologies and thus, higher expectations towards the employees in that area. For example, from the experience of the paper’s author results that they willingly offer to conduct the first job interview via Skype.

The employees should be aware of the foregoing to acquire persons with high potential from the external labour market and to win the involvement of the present employees, influencing this way the evaluation of the company as the work place. Therefore, the use of IT tools helps creating the image of an attractive, modern employer and thus it increases the probability of employing the appropriate person (for more, see Piwowar-Sulej, Pietroń-Pyszczek, 2011, pp. 79-91).



Coming back to the issues of knowledge management, it has to be stated that in the reference books there is a large number of classifications of IT tools. Two classifications are presented below, while none of them cannot be regarded as the complete one.

According to Jashapara the most popular IT tools making up the global systems of knowledge management are (Jashapara, 2006, p. 370):

- document management systems – making information available to the right people at the right time,
- decision-making support systems, which take place through data collecting and analyzing,
- team support systems,
- managerial information systems – addressed to top managers,
- workflow management systems,
- customer relationship management systems – helping expand knowledge of the customers’ individual preferences.

In other view, the aforementioned tools are grouped in three areas. They are (Bernard, 2006 cited by: Rydz 208, p. 338):

- knowledge repositories,
- export directories,
- collaborative tools.

The first group includes document management systems and databases as well as search and retrieval. Experts directories are specific telephone books containing the information about competency profiles of individual employees. Collaborative tools are team support systems, e-mail, discussion lists and instant messengers.

It is worth to be stressed here that there are various offers in the market, which promise the implementation of knowledge management system by purchasing and installation of the acquired software. However, no IT system is able to manage the knowledge independently. Moreover, the purchase of one of the aforementioned IT solutions does not per se mean that the company has implemented the idea of knowledge management system. It is also important that the same IT tool may be used differently in two different organisations – supporting the knowledge management more or less.

Table 1 shows IT tools related to the particular stages of knowledge management in R&S.

***Table 1: The IT tools supporting a completion of the knowledge management cycle as part of personnel recruitment and selection***

<b><i>The stage of knowledge management</i></b>	<b><i>The IT tools supporting a completion of the particular stage</i></b>
knowledge collection	<ul style="list-style-type: none"> <li>▪ corporate recruitment websites containing not only job offers but also application forms,</li> <li>▪ catalogues (databases) of application documents,</li> <li>▪ on-line tests (in knowledge, skills, job predispositions) used in the selection process,</li> </ul>
knowledge storage	<ul style="list-style-type: none"> <li>▪ database applications (cataloguing application documents),</li> <li>▪ systems supporting team work in recruitment projects,</li> </ul>
knowledge use	<ul style="list-style-type: none"> <li>▪ pre-selection tools for gathered applications,</li> <li>▪ a tool creating an applicants’ ranking at the end of the recruitment and selection process.</li> </ul>

Source: own work

Emphasis is put mainly on the primary goal of management, namely on employing an applicant with adequate capacity. As pointed out in Fig. 2, there are also other possibilities to exploit knowledge such as making changes to the remaining elements of HR function (on the

basis of the expectations postulated by applicants) and modifying the process of personnel recruitment and selection itself (on the basis of previous learning experiences).

In this way, it should be found that knowledge importation is favourably enhanced by employing a tool such as an application form. It forces an applicant to provide information in which an employer is interested (e.g. education, work experience, expectations about work and salary conditions).

The basic requirement for applicants of different positions is possessing defined knowledge and occupational skills. The indicated competence can be checked using, amongst others, IT systems. These can be test-dedicated tools or e-learning software, which – so to speak “as the opportunity arises” – allows checking the level of competence in a particular thematic field. IT tools can also help determine the level of intelligence, personality type, and occupational predispositions of an applicant. Many so-called psychometric tools for selecting job applicants have an electronic form (more see Piwowar-Sulej, Grajewski, 2010, pp. 92-100).

Using information technologies generally facilitates knowledge codification and storage. Codification allows the significant reduction of knowledge distortions occurring in the traditional procedure of information sharing (through interpersonal communication). Every authorized employee can obtain from the knowledge base as much knowledge as they need in so far as their permissions allows them. It is important for all interested parties to have access to the knowledge they need. That is why systems facilitating teamwork within personnel R&S projects are significant tools. Depending on the requirements for a given position, for which an applicant is searched, the HR personnel, line managers (management at different levels), and board will take part in the selection process.

Using knowledge means making the right decision. The decision-making process can be sped up with tools serving to preselect the filed applications or creating rankings of potential employees. Thanks to the use of the application form on the corporate website, shown above, applicants are forced to provide answers to the most important selection questions. Next, the applications meeting the basic job requirements can be selected in an easy way. Systems supporting verification of the applications' documents (CVs, cover letters) by searching databases with the applicants have also appeared on the information technologies market, supporting the human resources function. Thanks to these, application documents, which prove that an applicant does not meet the basic selection requirements, are quickly rejected from the company's own database.

The figure presented above should be treated as a proposal that should be updated along with development in the field of information technology. There is a necessity of permanent analysis of information technology market in terms of implementation of increasingly modern, comprehensive and concrete solutions. It is worth to be stressed here that the tools presented in the Table 1 may be separate applications or functions offered as a part of one global IT system. There are systems, which combine the functions presented above within themselves. Applicant tracking system (ATS) enables the complex electronic management of the needs connected with personnel selection. ATS systems are very similar to CRM systems (customer relationship management systems) but they are designed to manage the relationship with job candidates. Advanced ATS systems enable even the full automation of the recruitment process.

The needs expressed by the employees of HR departments are also significant. In empirical research – shown in the next part of the article – emphasis was then put on both the popularity of using certain information solutions and the reasons behind it.

#### 4. THE SCOPE OF USING IT TOOLS IN THE PERSONNEL RECRUITMENT AND SELECTION PROCESS - THE RESULTS OF EMPIRICAL RESEARCH

When dealing with the issues of the use of IT technology in the process of job candidates selection, the significance of the Internet cannot be ignored. Portals with job offers are particularly popular. Information presented in such websites is very attractive for people looking for jobs because of a considerable amount of advice, remarks and tips.

The increasing accessibility of on-line resources cause that enterprises design their own home pages. At the beginning, such websites were strictly informative and provided merely the activity profile of an enterprise or sale offer. In the course time, his kind of advertising drew attention of HR departments. As a result, website designers included bookmarks with job offers and information about job opportunities in a given company in the structure of home pages (Wrzalik, Sokołowski, 2009, pp. 447-456 cited by: Niedbał, Wrzalik, 2011, p. 239).

Studies of the reference books allow stating that the employers more and more frequently use the company website for searching for necessary employees. Such conclusions come not least from the latest report „Resources and Talent Planning” prepared by The Chartered Institute of Personnel and Development. As many as 59% of 626 companies found developing of their own websites – particularly in the part dedicated for career opportunities – being the best way to attract the job candidates (Jak efektywnie..., 2011, p. 3).

As it results from the analyses of the content of the websites of 100 largest companies in Poland - „Pracodawcy online” („Employers online”) – 70% of examined companies place at their websites information about the career within the company organisation and 46% of them publish current job offers. Bookmarks for people interested in apprenticeship and internship programmes were placed at 32% of corporate websites of the analysed companies. The largest companies provide multistage systems of searching for offers and the companies belonging to global concerns usually have the international base of offers, accessible in English. Companies try to enable the potential employees to make the job application in the fastest and easiest possible way that means via Internet (Trojan-Stelmach; 2008, p. 42).

Taking the foregoing into consideration, in the procedure of own research in 2011 the following research hypotheses were formulated:

- 1) Due to the increasing popularity of recruitment portals, in large companies the IT tools enabling the job offer placing at company website are the most frequently used.
- 2) Employees responsible for personnel selection feel the need to use IT tools in personnel selection process. The scope of usage of those tools, however, is determined mainly by the cost of purchase of the software in relation to the potential benefits.

Hypothesis No.1 was verified positively. 79% of the examined companies are equipped with tools for placing the job offers at the company website. What is the situation regarding application forms and other tools characterized previously? The synthetic results of research on the scope of using these IT tools are summarized in Table 2.

As regards the form in which the base of candidates for the needs of particular recruitment is made, only 21% of companies have IT system organising application documents. In other companies, the relevant files are saved to the hard drives or they are left in electronic mail folders. In one of the companies, the base was created in MS Excel. It is surprising that in two companies the documents are maintained in paper form.

The research proved that by far the largest reserves (shortages) in the scope of using IT tools lie in the selection process. It mainly concerns electronic tools serving to conduct job interviews and to verify knowledge, skills and occupational predispositions of the applicants.

It must be stated that not many – only 8 companies – use e-learning systems in which the knowledge tests are included. It results probably from low popularity of the use of e-learning

in Poland. As it was presented in 2007 in the document „National Strategic Reference Framework” issued by The Ministry of Regional Development, only 3% of all Polish companies use e-learning, which is a low rate against the background of other European Union countries (<http://www.edustat.com.pl/pub.html?nr=15>, 31.03.2011).

**Table 2. The popularity of using company IT tools serving to recruit and select personnel**

<i>The scope of using an IT tool</i>	<i>The popularity of using (% of the companies using a given tool)</i>
corporate recruitment websites	79%
cataloguing (the databases) and preselecting the applications filed via the application form	21%
team work in recruitment projects (human resources department and other interested parties)	35%
e-learning tools to carry out knowledge and skill tests	8%
knowledge and skill tests exclusively dedicated to the personnel selection process	18%
personality, intelligence, occupational predispositions tests	13%
online interviews with the applicants	7%

Source: own work on the basis of the results of research done

It is assumed that the use of personality, intelligence or professional predisposition tests significantly increases the probability of correct selection of job candidate. The effectiveness of those tests is from 20% to 50% better comparing to random selection, unstructured method, or graphologic method (Goffin and Helmes; 2000, pp. 421-454; Robertson and Makin; 2007, pp. 31-32,34-36). However, the results of studies conducted in 2009 show that only 58 of 100 companies use those tools, including the fact that 22 of 100 companies use them in electronic form (see Table 3, for more, see Piwowar-Sulej, Grajewski, 2010, pp. 92-100).

**Table 3. Popularity of electronic psychometric tools for diagnose of the potential of job candidates**

<i>Tool name/author/publisher</i>	<i>Distributor in Poland</i>	<i>Popularity (% of the examined companies which use the tool)</i>
INSIGHTS DISCOVERY Publisher: Insights Discovery Ltd	Insights Polska LTD	3%
SUCCESS INSIGHTS, <i>W. M. Marston</i> Publisher: TTL Inc Success Insights International Inc.	GoldenMark	3%
EXTENDED DISC Publisher: Extended Disc International	Extender DISC Polska LTD	6%
PAPI, Proselect Publisher: Cubicks / Alta	ALTA LTD	4%
APOs Publisher: SLG Thomas	SLG THOMAS INTERNATIONAL POLAND LTD	2%
M5Q, MBS, DiSC Publisher: Meurs	DGA Inc.	2%
MGIB, OPQ32, MQ, Publisher: SHL Ltd.	SHL Polska LTD	2%
	<b>total</b>	<b>22%</b>

Source: own work on the basis of (Piwowar-Sulej, Grajewski, 2010, pp. 95-96)

Significantly, the majority of the companies researched launches over 20 personnel selection projects every year. It then seems that the IT tools – according to the reasons for using thereof presented above – would significantly facilitate the process of gathering, storing, and using knowledge of the applicants and thereby contribute to employing the right persons.

As shown earlier, the respondents were also asked the reason for not using information technology. The answers to this question are provided in table 4.

**Table 4. The most frequent reasons for not using company IT tools serving personnel recruitment and selection**

<i>The scope of using an IT tool</i>	<i>The most frequent reason</i>	<i>Percentage of the respondents providing a reason</i>
corporate recruitment websites	no need	21%
cataloguing (the databases) and preselecting the applications	no need	38%
team work in recruitment projects (human resources department and other interested parties)	no need	46%
e-learning tools to carry out knowledge and skill tests	no need	68%
knowledge and skill tests exclusively dedicated to the personnel selection process	no need	46%
personality, intelligence, occupational predispositions tests	no need	46%
online interviews with the applicants	no need	67%

Source: own work on the basis of the results of research done

Research indicates that the main reason for not using IT tools in every scope is not the lack of appropriate offers or the expense of purchasing software, but not feeling the need to use these tools. Thus, the hypothesis No.2 was verified negatively.

The presented approach to the selection of applicants for a job corresponds to the results of research conducted by Sokołowski, concerning the use of information technology in the process of diagnosing the predispositions of decision-making managers. 22% of the respondents – the HR experts – found the identification of the shown managerial competence insignificant (more see Sokołowski, 2011, pp. 31-34).

What is the cause of no need for the use of IT tools felt by HR specialists? A certain answer may come from the analysis of types of the personality connected with rejection of an idea (solution, proposal, etc.). In Table 5, there are presented the possible personality types with the consideration of the level of knowledge in the field which was the base of making „no need” decision.

In case of opportunists, the lack of knowledge and imagination concerning the using of IT tools does not allow acceptance of the rational arguments supporting the realization of innovative project. That is why they search for “no” arguments. Dogmatists simulate having the knowledge with the awareness of their own incompetence. The change may be the attempt on their rights and finally, on their position. There is arising a tendency in them to collect information about the negative consequences of implementation of IT systems. Finally, the agnostics have the knowledge but they cannot apply it to the operational conditions of the company they work in. In such persons’ point of view, informatics and new technologies are for the large, wise and rich ones.

**Table 5. Personality types connected with the attitude of rejection of IT tools with the consideration of the level of knowledge in IT tools**

<b>Knowledge</b>	<b>Personality type</b>
none	opportunist
rudiments	dogmatist
owned	agnostic

Source: own work on the basis of (Fic, 2008, p. 117)

Change of the „no need” attitude certainly requires the deepened diagnosis of the cases of particular organisation and people. However, some kind of receipt may be suggested. It consists in taking the following actions (cf. Fic, 2008, pp. 120-121):

- systematic training of the personnel in the idea of knowledge management and the meaning of new technologies,
- change of organisational culture profile towards such values as knowledge and information,
- reorientation of the role of HR department towards HR business partner.

The first of the postulates is the easiest to be implemented. Actions indicated here may become a foundation of the subsequent changes. HR business partner must have competences both in personal and business area. Only then it may provide HR solutions (also the IT tools) in response to the strategic needs of the organisation.

People managing the companies which do not have the advanced tools for personnel recruitment and selection, but also those in which, according to the results of the research, adequate IT tools have been implemented, are worth to be made sensitive to the fact of the presence of technological barriers in knowledge management. A. Riege points out that the most significant of those barriers are manifested by (for more, see Riege, 2005, pp.23-29):

- lack of integration between system and task execution processes,
- lack of communication about the benefits,
- lack of consideration of individual user needs,
- lack of technical support and lack of trainings in system operation,
- unrealistic expectations towards the employees concerning the knowledge of a particular technology.

## **5. CONCLUSIONS**

A modern company to be fully competitive should fulfil the following conditions:

- possess adequate knowledge,
- be able to use this knowledge appropriately.

It concerns any kind of knowledge occurring within a company – significant for making the right business decisions.

The popularity is being won by the idea of knowledge management which promotes the conscious and systematic taking of actions leading to the increase of the knowledge within the organisation and its adequate use. In this article, the significance of knowledge management at the level of personnel recruitment and selection was stressed. The indicated elements of the HR function are fundamentally important for a company. As a result of these, it has adequate human resources at its disposal.

IT tools, which utilize information resources as a factor of support for management processes, are becoming an essential capital in management. Application of information technology in contemporary organisations is a natural process. IT tools can contribute to an increase in effectiveness of completing the knowledge management cycle at the R&S level

through facilitating and speeding up the process of collecting information on the applicants' qualifications required for a job as well as their expectations towards employers and preselecting the applications.

In this article, the author's own classification of these tools was introduced with reference to the levels of the knowledge management cycle taking the main goal of this management – employing the right applicants – into consideration. The results of empirical research concerning the use of particular IT tools were also presented.

Research indicates decreased popularity of IT tools supporting job applicant selection. The fact that the main reason for not using IT tools within the different scopes of the personnel selection is not feeling the need to use modern technologies by the employers of the HR departments is shocking. In the article there are presented the potential causes of “no need” attitude and possibilities of its change.

To sum up, it should be stressed one more time that the significance and complexity of knowledge management results from the interdisciplinary nature of this idea. Not only does success in this matter depend on the employed information solutions but also on the people who use them. It is worth to point out again that the knowledge management should cover the entire organisation, not only its selected functions, such as HR function or its component – R&S process.

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*Balázs Gyenge, János Buresch*

## 2.3 USING A SATISFACTION INDEX SYSTEM IN CORPORATE MANAGEMENT

*“The lack of dissatisfaction does not equal satisfaction.”*

**Summary:** According to market economy interpretation, the key to make a profit originates from income from customers; therefore, the companies’ management can evaluate their basic functions, abilities exclusively by examining customer needs and their satisfaction. Satisfying customer needs at a high level leads to satisfaction in the long run resulting customer loyalty, reasonable activity and ultimately corporate income. Nevertheless in practice logical connection between factors are not as simple and coherent as that.

During the last decades, the researchers of customer satisfaction also have examined how to define systematically the effective satisfaction of customer needs and its elements applicable in models. The theories drawn did not manage to meet the requirements many times, or concerning their empirical studies the researchers often get various results, however, all of them agreed that customer satisfaction is a substantial part of the activity which needs to be examined continuously.

In the current study, we define a methodology of customer satisfaction assessment, a model that is capable of observing and forecasting the possible effects of our efforts on satisfaction. The essence of our model is to make non-financial performance levels measurable just like financial indicators even if they are impossible or just hard to measure considering the characteristics and psychological factors of satisfaction motivations. We wish to make and introduce such a model which besides financial indicators integrates those quality dimensions into management monitoring which possibly lead to satisfaction and loyalty what is meant to be the base for generating profit on the long term.

**Keywords:** satisfaction, index system, performance measurement, model, system-like approach

### 1. PROBLEM STATEMENT AND METHOD – PERFORMANCE MEASUREMENT

The problem of measuring performances is almost as old as the action of managing activities. The earlier measuring concepts were focusing on controlling activity progress and tracking financial processes. Implicitly performance measurement by financial indicators evolved early, and it has been an area of a deep research. Several measuring methods are known, these intend to determine performance in a simple or complex way. (e.g. BSC)

Many performance measurement systems interpret performance as tangible and measurable performances in financial terms, however, management literature underlines that performances being evaluated for the customers are based on some factors that cannot be measured directly or are subjective to them. It should be asked whether to create a particular performance measurement system concentrating not on measuring financial indicators, taking into account the psychological characteristics of consumer motivations, too.

We are rather aware that the problem is really serious if we also mean brand equity as well as customer loyalty and satisfaction as performance. At present literature is divergent concerning the interpretation and connection of terms such as brand equity, satisfaction and loyalty. Measuring customer satisfaction and dissatisfaction by subjective numbers can impose several further difficulties and dilemmas; companies often neglect this process but it is definitely a determining factor in customers’ consumption behaviour and brand use. The need for constant raising customer service level and the widening service content of the products raise our attention to think over the dimensions of performance measurement.

The introduction of a performance evaluation system including not only financial indicators or the addition of the system existent both have a great importance during a

company's operation since thanks to these the results support the company to maintain the results lasting long and to create brand loyal consumer groups.

Connection between performance and quality is also a dilemma, however obvious; its particular dimensions are hard to interpret – especially in case of services – though it is a determining element of value for the customer. “More and more people say that nowadays not the products that compete in the market but services and customer service performances.”

Most indicators used these days are not capable of expressing clearly guidelines concerning customer satisfaction or dissatisfaction, moreover the question becomes harder, and satisfaction goes together with repurchase on condition of the performance that we supposedly would like to reach in real terms. Fortunately, dissatisfaction does not always cause brand switch, consequently if we measure or detect significant values, then we have the chance to intervene as well. Finally, we can state that indicator numbers based on merely finances cannot measure real performances, they are too aggregated, and they do not help during the interventions. This topic is extremely up-to-date because the growing market competition situation requires paying more and more attention than earlier to customer needs and this way own performances, “differentiation of performances”. We need to meet several new challenges, that is why we are examining the results of performance function researchers.

### **1.1. FUNCTIONS OF PERFORMANCE MEASUREMENT'S “NEW” MODEL**

In this study, we are looking for the answer how quality performance and customer service performances can be built into performance measurement and how it may expectedly lead to satisfaction. Using the supposed connection between brand loyalty and satisfaction we would like to create a multi-level system which provides management control points, and it is able to forecast positive or occasionally negative shifts. The performance system to be created includes several requirements, and at the same time its use gives us advantages as follows:

- *Management (directing) functions*: providing information continuously about connection and state between real and planned performances making intervention possible.
- *Organizational function*: setting normatives and their organisational communication which function as a foundation to goals and values important for the company meanwhile strengthening the organisation members' commitment, responsibility and accountability towards these goals.
- *Technical function*: providing out-company stakeholders information about organisation performance functioning as reference value and may also be represented as a guarantee element in a way.

### **1.2. PROBLEMS OF PERFORMANCE MEASURING/INCREASING MODELS**

Increasing performance can work completely only if managers define tasks done by themselves and performances as well as customer values appeared with possible accidental faults. In the process of definition we should agree on specific quality parameters which can measure outputs earlier made in two ways:

- Concerning the quality of inner processes, or
- Concerning qualifications to meet goals, relating:
  - organisational goals;
  - customer goals.

During their analysis researchers face those problems which company managers can target after analysing study results:

1. Methods analysing performances often turn focus point inside, and present customers as objects without will, or neglecting subjectivity influencing customer decisions. Some researchers draw our attention to the steps of customer decision-making; however, these steps are attained during performance measurement (or performance evaluation) because it is hard to build it into the set of objective indicators. Yet it is clear that the customer is eventually the one who can always evaluate exclusively the quality of outputs above from his particular view. To measure quality Johnson and Lewin put management solutions focused on increasing performance into four categories (Miller quotes, 1984).

- Target models which have a great emphasis on the process of determining organisational goals. The target model characterises the effective organisation setting its goals, determining activities necessary to reach these goals, then it delegates resources to these activities.
- System model supposes that a better organisational performance is resulting from an efficient organisation structure. Owing to organisation requirements and fast change of expectations it defines organisational efficiency as something to be measured in a difficult way and describes performance rather with the help of the combination of system characteristics. Instead of defining the term of efficiency they try to create a changing group what can lead to efficiency supposedly. (input variables, output variables, structural features, motivation, incentives)
- Decision systems put designing models in the foreground. Reaching effectiveness and efficiency is due to proper creation of designing and decision-making structure. Based on efficiency from an economic point of view an organisation creating the most output from given input or reaching a certain level of output with using the least input is said to be efficient. Or if an organisation is efficient, then resource allocation is Pareto optimal, and rearranging resources can produce new values only if decreasing values can be found elsewhere.
- Models based on management studies use different analysing methods depending on the features of the decision itself (mathematical programming, decision tree, simulations etc.). (Miller, 1984).

Like quality management concept, from the models above we can see that the customer's point of view is missing, or rather what is "appropriate" for him.

2. Concerning indicator numbers it is important to highlight that the values measured mean a little information to the user. The evaluation of performance can actually be interpreted as a contrast (in terms of time or benchmark) as well as the term of customer "requirement" is always relative.

3. A common problem of performance measurement that we should focus not only on measurable performances because customers do not only focus on this, or the management in the organization can act disincentive in making better performances on the long run, all in all they will be interested in reaching expected indicators.

4. Summing up performances faces an obstacle because there are several possible methods to measure given performances, furthermore the chance to combine is not straightforward, and the dimension of the individual numbers may be essentially different. There is a need for a theoretically established transparent and reproducible measurement and aggregation process which can provide only one or some complex numbers about how efficient the organisation is in turning inputs into outputs. This measurement and aggregation method should manage different output and input information, should not depend on the weights or prices established earlier, and should be able to manage qualitative data besides quantitative ones (Miller, 1984). As a principle, it is worth introducing the following: "We should measure anything that is measurable and turn anything immeasurable into measurable."

### 1.3. BRAND AS A COMPONENT OF VALUE

Like products, services are labelled with a brand, which supports users in orientation, differentiation from other competitors. Usefulness and importance of branding: it helps to identify the service or the service provider, and to differentiate that from other competitor's service, and often contributes to the satisfaction of customers' psychological needs.

Brand equity is basically an economic category since it is the result of consumer demand and purchase; it creates continuous and excess cash flow that qualifies for the brand's "yield". Brand does not compose only of the identifiable aesthetic or symbolic characteristics (performances) of the product or service but also its positive or negative emotional effects, which grow in the customer after perceiving the factors, mentioned above in a subjective way.

All those associations that are present in the consumers' minds due to performances. As for the producer this brand equity means a new dimension of performance that should be observed, measured and corrected constantly.

## 2. MATERIAL – VALUES AND PERFORMANCE IN THE CONSUMER'S EYES

### 2.1. PERFORMANCE (EFFICIENCY) DIMENSIONS

Performance is defined as a measurable result of a particular activity. According to Neely, Gregory and Platts' (1995) definition, performance measurement is a process of measuring the efficiency and thriftness of a particular activity. Here we can find both sides of performance. The elements in literature are as follows:

- Added value: An excess value that is born in a particular process; or with the same amount of resources greater added value means greater performance.
- Quality: Service providers offer consumers a "package" that is why quality dimensions known at the products can only be used partly. There is a much greater importance of confidence, mouth tradition, habits in services. (Chikán, 2006)
- Efficiency: Ratio of output and expenditure. Different efficiency indicators can be drawn according to the type of expenditure such as complex indicators expressing the outcome of expenditures together. (Magyar Nagylexikon, 2002)
- Economy: Expenditures projected on a unit of the outcome reached, the product or services made, its amount given and evaluated in money. Economic indicators are usually defined as the quotient of the outcome and expenditure. (Janza, 1999)
- Outcome: Amount how much the real outcome matches the goals and expectations set. (Janza, 1999)

In case of corporate value creating processes we can only get information about efficiency and economy if we follow performance constantly. Evaluating information opens an opportunity to a continuous feedback including everyday operation control or strategy accomplishment control. (Becker-Turner-Varsányi-Virág, 2005)

### 2.2. QUALITY AND VALUE

People often use the terms '*efficient*', '*valuable*' and '*quality*' with synonym meanings. They think that something of "good quality" and value at the same time (for instance customer value, usefulness, appropriateness) or effective (for instance economic, reaching goal, efficient, or appropriate etc.) and vice versa. In literature, we can find flexible explanations what the two terms really mean.

- Efficiency is usually determined in correlation with some output performance while quality is in connection with a standard or expectation. In case of services and often products fairness is added many times which brings relativity into judging.

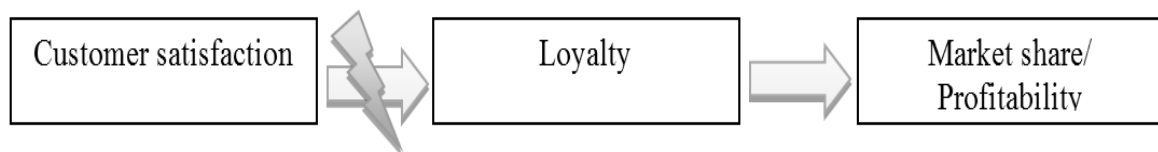
- The term quality coming from economy concentrates on relative quality and ensuring it, whose essential element is customer or user satisfaction which can be connected to customer value.
- A business activity's efficiency (efficiency) can be measured how much and what ratio the activity contributes to the profitable satisfaction of consumer's needs! Efficiency is the indicator of performance (Gyenge, 2008).
- The term of value is closely associated with the term of consumer's need (need at all). In the consumers' view value is an abstract term concerning the ratio of the need. Value is no other than the consumer's subjective opinion about appropriateness!

For consumers performance means value only if it has those features that help to satisfy a certain amount of their own need no matter whether this need is conscious, latent or not reasonable. The value or in other words quality dimensions of services and products may show essential differences.

### 3. SATISFACTION = LOYALTY CONCEPT CRITICS

It can be made possible that satisfaction affects loyalty on the long term (Mittal-Kumar-Tsiros, 1999), however, this relation is possibly non-linear what several authors can also underline (e.g. Mittal-Ross-Baldasare, 1998). If a product and a related service meet customer needs, then a high level satisfaction can take place, explains Jones-Sasser (1995) and he thinks that this high level satisfaction can also lead to a greater customer loyalty on the long run. Thus, literature is not unified.

*Figure 1. Non-linear connection between customer satisfaction and income*



Source: own editing

Nevertheless, there is a close relation between customer loyalty and corporate profitability, which means this question, is still important for us. Experts suppose that a satisfied customer becomes loyal, and initiates repurchase while this is not always the case ideally. The consumer as an individual has a complex process of decision-making in which he considers several other determining factors when making decisions. Customer satisfaction is a necessary but not sufficient condition of loyalty.

- fairness of transaction,
- relative efficiency of transaction, characters of substituting offers
- satisfaction, attitudes towards suppliers,
- and customer (former) expectations.

In our opinion satisfaction is aimed at being measured since it is in relation with loyalty on the long term, and it is easier to measure as opposed to loyalty. In other words satisfaction may be interpreted as some kind of performance having more components. (See the model presented.)

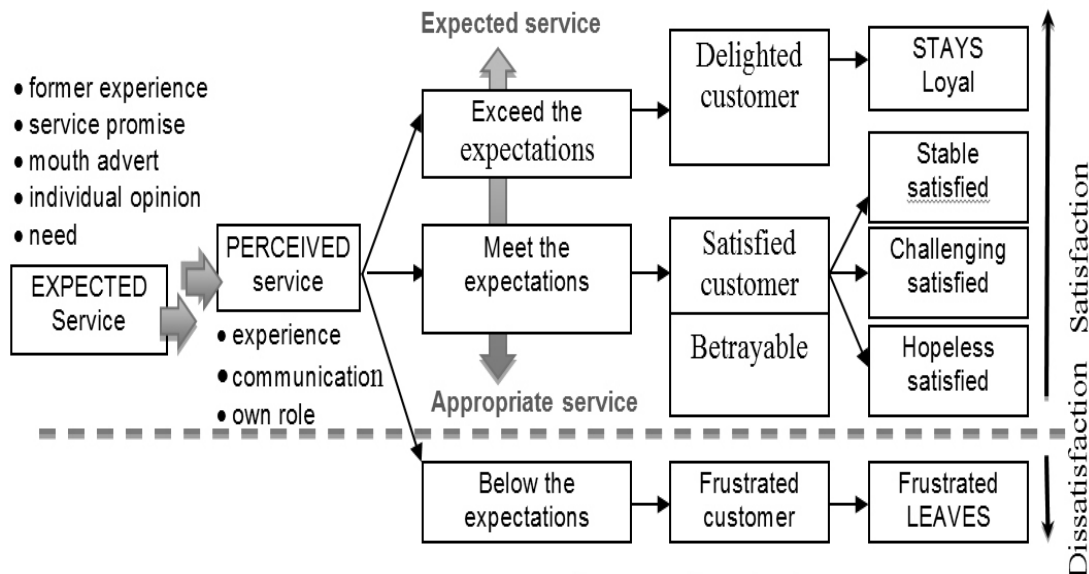
According to particular studies consumers can be classified into at least three basic types based on the nature of their satisfaction (Stauss-Neuhaus, 1997) in the following way:

- stable satisfied ones who do not change brands and prefer old brands;
- challenging satisfied ones who have new needs, and if their needs are not completed, then they possibly leave;
- hopeless satisfied ones who feel that they cannot expect more, and that is why they should find a better offer, then they leave;

The difference between qualities of services perceived and provided, and the management of this difference is an issue whose importance is out of question regarded customer retention. Evaluating a service the customer compares his expectation between the expected and appropriate service with the service perceived (experienced). That is not other than service quality.

As we can see in the following figure and according to some authors' approach, customer satisfaction can be rather interpreted as the customer's two-factor (bipolar) mind whose emotional resultant can express his real attitude. Except for the two extremities, satisfaction is rather a passive attitude than an active action motivation.

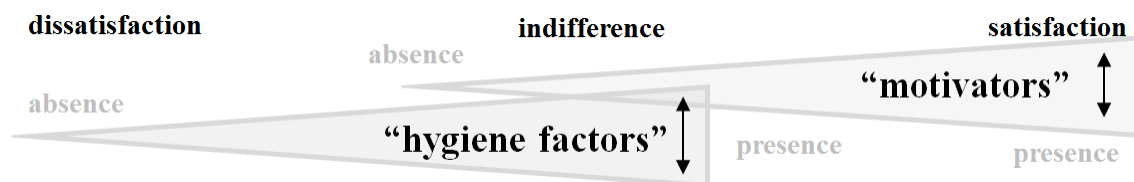
**Figure 2: "Performance - attitude - behaviour" model**



Source: own editing included some new parts and based on Stauss-Neuhaus, 1997

Herzberg's two-factor model theory (1968) explains that satisfaction itself does not depend on motivation exclusively (satisfied need) since the lack of factors affecting positively does not mean dissatisfaction automatically; the so-called "motivators" influence only satisfaction (e.g. expected result). At the same time the lack of other factors increases only dissatisfaction, these are called "hygiene factors" (e.g. safety, connection etc.).

**Figure .: Different factors concerning satisfaction and dissatisfaction**



Source: own editing

Psychologically dissatisfaction is not the opposite of satisfaction but the lack of satisfaction, and this is true the other way round. Based on this we can have a categorisation of service elements with four types in the following way:

- Dissatisfaction elements: These factors, if they are inappropriate, make the client dissatisfied. However, they do not make him satisfied at all. (Generally in this case we

should ensure the “guaranteed or qualifying level” reaching a yet acceptable and available with minimum cost but later it is not worth wasting additional energy on developing these elements.)

- Satisfaction elements: Unlike dissatisfaction elements, these elements should really be developed above the acceptable level because satisfaction will also increase proportionately to it at the same time. It is true that the minimum level will not lead to dissatisfaction either.
- Critical, or double elements: These are suitable for provoking both satisfaction and dissatisfaction. Speed of service is an example since fast service makes one satisfied and slow service makes him dissatisfied.
- Neutral elements: These factors have an effect on the ratio of satisfaction. For instance inner compatibility and connectivity technical factors important for the provider are not available for the clients in a normal case.

If we want to know whether the customer is satisfied or not, it is not enough to ask “Are you satisfied with the service?”. Actually, the customers do not reply with “answers” rather with business decisions, leave or loyalty. Most of the customers do not express their negative attitude but they draw back instead. Because of these, it is practical to observe customer satisfaction; there are several further positive consequences (Muffatto-Panizzolo, 1995 and Fornell, 1992):

1. company’s fame or image improves;
2. loyalty improves (Fornell);
3. more attention paid to consumer needs;
4. lower transaction cost;
5. price flexibility decreases (Fornell);
6. marketing cost decreases;
7. the cost of failure connected to a product/service decreases;
8. higher labour stability;
9. can mean great switching obstacle in relations.

#### **4. TWO-FOLD SATISFACTION INDEX SYSTEM – THE MODEL**

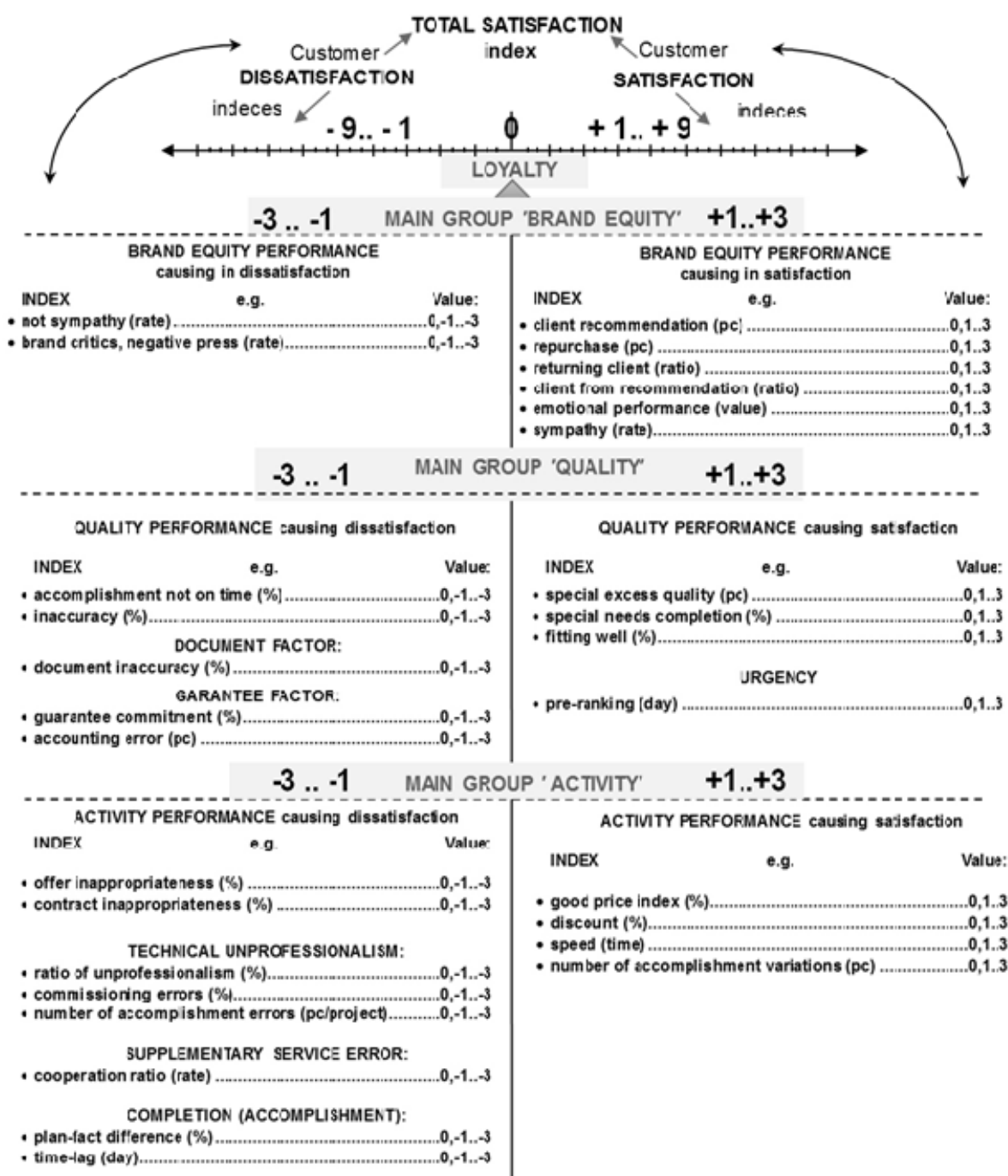
The two-fold satisfaction/dissatisfaction index concept is based on terms such as customer loyalty, satisfaction, brand equity, quality and performance (see Figure 4.)

The new model is based on human decision-making process since its complexity it can still be interpreted as a black box. The model creates measurement while it brings psychic factors into the dimensions of satisfaction and dissatisfaction. For instance, the customers often interpret service different from the way the suppliers think, and generally they would be more satisfied with a more reliable but lower level service than the present one.

Satisfaction and dissatisfaction form the two sides of the new model, and their amount is represented by grades on top of one another. We intended to create a comprehensive index system having a double dimension.

Based on the horizontal dimension, the double dimension of the factors acting on satisfaction and the factors acting on dissatisfaction can be separated. Meanwhile, based on the vertical dimension, the layers of the individual indicators form correction levels on top of each other (see Figure 4).

Figure 4: Satisfaction and the recognizable service quality



Source: own editing

Besides productivity indicators, the model integrates willingness to consume into formulating indicators as correction factors. To refine the final result we formed brand equity indicators as well. The model is able to make loyalty measurable, also establishes information concerning product development and answers important questions such as *“How to intensify the customer’s satisfaction in a way that loyalty should grow in him?”*

Scoring in a unified system has a big advantage namely that we get a total value expressed in numbers (See Figure 4.) which can be cumulated in an aggregated way as well as by main groups. We cumulate indicators with values of identical scales (with the help of common denominator system). In the model, we qualify the indicators of different types or dimension



by points between 0 and 3 according to the following verbal scale: (0- no great importance in dissatisfaction or satisfaction; 1- considerable importance; 2- great importance; 3- extraordinary importance). It is possible to match values with professional qualification of the indicator values. On the left hand side of the model in case of dissatisfaction indices the values have negative signs while on the right side in case of satisfaction indices the values have positive signs.

We may take the arithmetic mean of the main groups to have their total value. If we add up the means of the main groups, this will lead us to the final qualification; it is possible to compare (to add) the main indices of dissatisfaction and satisfaction to determine the cumulated satisfaction index whose value greater than zero shows the amount of “expected or perceived” satisfaction. Evaluating indicators can take place in cycles of quarters, and from these we can create timelines to track changes.

## 5. EXPECTED RESULTS, FINDINGS, RECOMMENDATIONS

Within the performance measurement and evaluation process getting to know, studying and forming, developing the factors acting on performance are crucial, as a sum up, managing performance. The three main processes of performance management are measuring and controlling performances, planning performances, and developing performances. (Chikán-Demeter, 1999)

The model presented here is suitable to put the non-financial performance indicators acting on customer satisfaction in a unified framework, and keep them under continuous control, or integrate them into the everyday routine of the management activity.

Focusing on satisfaction and dissatisfaction factors may give better results and this will make customer loyalty and this way profitability on the long run. Nowadays performance management is every enterprise’s primary interest.

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*Markku Sippola*

## 2.4 THE DICHOTOMY BETWEEN ‘INNOVATIVE’ LEADERSHIP AND ‘BUREAUCRATIC’ MANAGEMENT IN THE POST-SOVIET CONTEXT: THE CASE OF NORDIC MANUFACTURING COMPANIES IN RUSSIA

**Summary:** This research conducted at Nordic-owned Russian factories asserts that foreign managements have certain latitude to choose their leadership style, although the post-Soviet context, factory size and the scale of investment (small-scale vs. large-scale) set constraints for HR management. The sample consists of seven factories, the number of employees of which ranges from 30 to 1200. It is observed that especially in case of acquisitions or brownfield investments; the Soviet organizational ‘imprint’ plays a decisive role as regards managerial orientation either towards ‘innovative’ leadership or ‘bureaucratic’ management. In factories having Soviet background (in terms of human resources or the characteristics of the locality) and of a larger size, a Nordic-type ‘incorporation participation’ or Soviet-style ‘welfare participation’ model was more likely to be applied, but more or less bureaucratic management was prevailing. Although almost comprehensive systems of innovative HRM were in place in a few smaller workshops, there was a peril that innovative leadership turns out to resemble Soviet-type paternalism. There was neither pure occurrence of innovative leadership nor bureaucratic management among the case studies. This leads us to a conclusion that the style adopted by Nordic managements is contingent upon specific organizational and broader environmental contexts, where it constitutes a hybrid of both innovative and bureaucratic styles.

**Keywords:** Bureaucratic management, HRM, innovative leadership, Nordic firms, Russia

### 1. INTRODUCTION

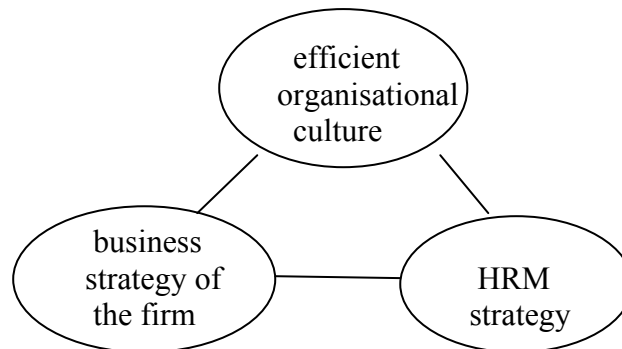
The term *innovative leadership* comes from Maslov’s (2010) view of the desirable developmental direction of Russian management where there is a threat that the Russian production machinery will undergo stagnation. There is the spectre of the return to ‘bureaucratic’ Soviet production model associated the notion of ‘management sovieticus’ (Liuhto 1993). To achieve higher productivity, the Russian authorities focus besides on necessary technical/economic changes also on the social aspect of politics of innovation. In 2008, the Russian government approved the Conception of Social-Economic Development until 2010, where emphasis is put on the transition to “innovative socially oriented type of economic development” (Ustinkin and Samsonov, 2010). At the factory level, Ichniowski and Shaw (2000, 364) found that innovative HRM (including quality and participatory elements), compared to mere quality improvement practices, raise both product quality and worker productivity.

When attempting to achieve such goals of politics of innovation by means of enterprise management, one has to consider the relationship between business strategy and HRM. This is what the concept of *strategic HRM* stands for. Roughly said, strategic HRM means that management of human resources is aligned to the business objectives of the firm (Boxall and Purcell, 2003, p. 47). Strategic management is also related to employee involvement and participation in decision-making in the company. According to Croucher, Gooderham and Parry (2006), “...strategic HRM aims to achieve strategically anchored employee involvement through High Involvement Management (HIM) techniques”. Among other features, direct communication practices are seen as one of the key characteristics of HIM (ibid.).

When it comes to the alignment of HRM to business strategies, specific organisational and broader environmental factors must be taken into account. They can be considered to a greater degree in compliance with a ‘best fit’ model asserting that human resources strategy gets effective once it becomes closely integrated with its organisational and environmental contexts (Boxall and Purcell, 2003, p. 47). The other model insists in adopting universal ‘best practices’ in the way people are managed while the ‘best fit’ approaches are regarded rather the sort of contingency theorising. This model presumes that all firms will improve their performance if only they identify and implement best practice (ibid., p. 61). In this article, the innovative HRM system – which is defined in the following section – is put forward as a benchmark or a sort of best practice for Nordic managements in Russia.

If we consider strategic HRM, we are in fact talking about a following triangle:

**Figure 1: The alignment of business strategy and HRM**



Source: Maslov 2010

According to Maslov (2010), contemporary Russian work organizations are based on bureaucratic, even military models of management, which prevents innovation from blossoming. Maslov defines the traditional ‘technocratic’ corporate culture in terms of hierarchic, rigid subordination, the prevalence of regulated, executive behaviour, rational-economic motivation and narrow specialization of administrative bodies and functionaries. Such a bureaucracy also obstructs the management the access to tacit and realistic information, traditionally only in possession of the employees, about the internal situation of the company. Maslov (ibid.) argues that Russian strategic HRM should be more oriented towards teasing out innovations especially in such strategically important sectors as biotechnology, communications, space applications and artificially intelligent systems. The most feasible way to complete this task is to focus on human capital and the development of ‘participative’ management. Therefore, the heuristic concept of ‘innovative leadership’ used here refers to the desirable outcome of management to utilise employee participation measures with a view to enhancing quality and productivity. Moreover, in this paper, we propose an ideal-type distinction between two types of leadership-management: an ‘innovative’ leadership approach and ‘bureaucratic’ management approach. While a traditional firm seeks to do things bigger and better, an innovative firm seeks to do new and different things.

## 2. INNOVATIVE LEADERSHIP AS A BENCHMARK

In contrast to technocracy, innovative leadership pursues for horizontal relationships, orientation to the employee, stimuli through final results and mutually defined goals. Pardey (2007, p. 209) enumerates open communications, reward systems, individual autonomy and the role model of senior managers as mechanisms to put creative solutions to problems into

action. A more elaborated account of what the innovative HRM practices involve is that of Ichniowski's and Shaw's (2000, 348). According to them, the most innovative HRM features should contain the following practices:

- Advanced communication and information sharing so that employees understand the effect of their contribution and the effects of changing market conditions and the firm's relative position in the market
- Careful employee selection to obtain highly skilled workers with the ability and interest in solving problems
- Flexibility in job design to enable workers to use a range of skills as they do operations jobs, limited maintenance, or problem solving
- The use of problem-solving teams off the line that enables workers to improve the performance of the line by contributing and implementing their suggestions regarding productivity enhancements and cost controls as well as quality improvements
- Advanced training in operations, maintenance, interpersonal skills and motivation, and problem-solving skills
- An implicit offer of employment security so that workers feel as though they are valued and trusted
- Gain sharing, or a multidimensional incentive pay plan as a function of many outcomes such as the quantity and quality of the product, safety conditions, and the profitability of the firm

In addition to these features, the management can cultivate statistical process controls and customer visits in the spirit of quality improvement, but they are not necessary parts of innovative HRM (Ichniowski and Shaw 2000, 349). In sum, the objectives of innovative HRM are to make workers to work harder, make better decisions, and solve problems both on and off the line (ibid., 348). Ichniowski and Shaw further claim that in order to be effective, these practices have to form a *system* where individual aspects all reinforce one another. The analysis of this study draws upon their features of innovative HRM, which constitute a coherent system when used in an optimal way.

Such a system of work organisation closely resembles an array of practices under the label of *high performance work systems* (HPWS), characteristic at high-tech greenfield plants established in the 1980s. From HRM point of view, HPWS include 'bundles' of employment-related practices such as: sophisticated selection and training; behaviour-based appraisal and advancement; single status policies; contingent pay systems, especially pay-for-knowledge, group bonuses and profit sharing; job security; above-market pay and benefits; and grievance systems (Godard 2005, 149). High performance work systems are supposed to go beyond involvement and participation at individual level (such as quality circles or self-directed work groups), extending to a broader view of involvement and consultation (Thompson 2005, 73). The core of HPWS is that work is organised to permit *front-line workers* to participate in decisions that alter organisational routines, which is achieved by using shop-floor production teams and statistical process control (Appelbaum et al. 2000, 7). Also, workers exhibit a great deal of autonomy over their work tasks and methods of work and they communicate about work-related matters with other workers, managers, experts, and in some instances, with vendors and consumers (ibid.).

It is the Nordic-Russian context that makes us to prefer the innovative HRM paradigm, advocated by Ichniowski and Shaw (2000) and Maslov (2010), to the HPWS paradigm as the conceptual framework of this analysis. The key features of quality systems, that of statistical process control and customer orientation constitute an important component of the 'bundles' associated with HPWS but are not necessary part of the innovative HRM system. Roughly speaking, the HPWS highlight the participation of front-line workers, whereas the innovative HRM system promotes participation and delegation to all workers. The concept of innovative

HRM clearly emphasises the participatory aspect, especially when it comes to Maslov's (2010) original idea. He underscores the resolving of problems of innovation at all levels of the enterprise by means of employee involvement. He even puts forward a notion that resembles Scandinavian ideal of 'delegated responsibility' (see Whitley 1999, 92-93) *as the most important principle of personnel management*, where synergy in combining job design with HRM can be achieved by the delegation of responsibilities to subordinates. Although Maslov has mainly had 'intelligent' work in mind while sketching out his innovative leadership model, the concept is here extended to HRM in all sectors, particularly because it aptly corresponds to Nordic leadership styles.

### 3. NORDIC LEADERSHIP STYLES AND PARTICIPATORY SCHEMES

The 'Nordic cluster' consisting of Denmark, Finland and Sweden constitutes or a distinctive entity in terms of Global Culturally Endorsed Implicit Leadership (CLT) dimensions (Dorfman, Hanges and Brodbeck, 2004, p. 690), where the effective Nordic leadership style exhibits high levels of Charismatic/Value-Based leadership, Team Oriented leadership and a considerable level of Participative leadership. By contrast, the scores of Humane-Oriented and Self-Protective leadership are low (ibid.). There is considerable tolerance of Autonomous leadership in the Nordic societies (Chhokar, Bordbeck and House, 2007, p. 31). However, there are some differences in how Human Oriented leadership is enacted: personal sensitivity and development support are seen the main means of achieving Human Oriented leadership in Finland, whereas in Sweden, it is the egalitarian emphasis through which individual autonomy is approached and thus Human Oriented leadership achieved (ibid.).

The issues of leadership and employee participation are intertwined. In the case of organisational change, especially direct forms of participation can play a key role in ensuring acceptance of change and in creating the conditions for employees to make effective contributions to their organisations (O'Brien, 2002). Russian enterprises have undergone an enormous change from state socialism to capitalism. However, there has not been a "normal" organisational change as regards Russian work organisations: autarkic top-down methods characteristic of the Soviet era must have been replaced by more "soft" management styles encountered more often in democratic societies.

Here, the Nordic firms have a key role to play – to introduce more "empowering" leadership into the Russian subsidiaries. Once a true model transfer occurs from the Nordic to Baltic countries, subsidiaries are involved in the *incorporation participation*, that is, incorporation of the trade union (or representative structures in general) in the long-term strategy of the firm in circumstances where a tight labour market is accompanied with a competitive product market (Ackers, Marchington, Wilkinson and Goodman, 1992).

For Nordic management, starting production in the post-Soviet countries poses challenges for getting rid of "management Sovieticus" (Liuhto, 1993) and the legitimization of the state-of-the-art management of the new era. It is argued that the Soviet management was corrupt and ineffective compared to that of the market economy, and the whole idea of management required renewal. The transfer from socialist enterprise management to capitalist one has been occurring gradually. In place of production focus, characterised by little interest in financial and personnel functions, in post-Soviet enterprises attention had to be paid to sales, supply and finance (see Clarke, 2004).

It is hypothesized that the Soviet model of employee participation resembles *welfare participation* (Knudsen, 1995, p. 11), where employee participation in decision-making concerns mainly welfare issues. Such issues are company-specific welfare arrangements, canteen facilities, housing facilities, sports and other recreational activities, scholarships, and

other forms of financial support different from the ordinary remuneration (ibid.). In other words, if this form of employee participation is not accompanied by any other form (in strategic, tactical or operational issues), employee involvement is rather narrow in scope. However, welfare participation corresponds pretty well to the functions of a state socialist trade union that served rather as a distributor and administrator of social insurance, social facilities and commodities for workers (see e.g. Clarke and Fairbrother, 1993, p. 94).

An analysis of Nordic-owned metalworking, food processing and construction material factories in the Baltic States (Sippola, 2010) exhibits a wide variety of approaches to coping with the complex management tasks in the post-socialist context with little reference to ‘Nordic-type’ consultation, co-operation and delegation of decisions with subordinates, analogous of consideration leadership behaviour. The subsidiaries having a carryover of employment practices from the Soviet time are more likely to be involved in Nordic-type ‘incorporation participation’ (utilising indirect participation). The lack of indirect participation at the greenfield factories is to some extent compensated by market, HRM or task participation forms. Correspondingly, the Nordic managers seemingly prioritise business objectives at the expense of employee participation, while the leadership style adopted at the Baltic subsidiaries reflects ‘initiating structure’ type of leadership rather than consideration leadership behaviour.

#### 4. DATA

All the case study companies are located in the western part of Russia. The fieldwork was carried out in 2011. There were two Danish, three Finnish, one Norwegian and one Swedish company in the sample. Basic information of these subsidiaries is seen in Table 1.

*Table 1: Basic information on the enterprises researched*

	<i>Stroy-material</i>	<i>Derevo</i>	<i>Himstroy</i>	<i>Agro-tehnika</i>	<i>Mashina</i>	<i>Stal</i>	<i>Provod</i>
<i>sector</i>	construction material	construction material	construction material	metal	metal	metal	metal
<i>market orientation</i>	local market	Europe	local market	local (FSU) market	local market	local market	Europe
<i>mode of entry</i>	brown-field	joint venture → acquisition	greenfield/acquisition	brown-field	brown-field	brown-field	brown-field
<i>established / acquired</i>	mid 1990s	1990	1995/1996	2005	2002	1993	1992
<i>scale of investment</i>	large	large	large	small	small (in the current premises)	small	large
<i>workers</i>	500	600	250 (unit 1) / 600 (unit 2)	40	70	70	900
<i>union members</i>	130	350	150	-	-	-	almost 400
<i>trade union or other representation</i>	trade union	trade union	trade union	-	-	elected EICF* representative	TU (chair-person, vice chair + committee)
<i>collective agreement</i>	yes	yes	no	no	no	no	yes

\* European Information and Consultation Forum (the company’s own)

*Stroymaterial* is a brownfield factory, established in mid 1990s on the site of a former Soviet construction materials plant producing products of similar type as *Stroymaterial* does nowadays.

*Derevo* was established in 1990 as a joint venture with a Russian partner. The Nordic owner acquired it entirely in 1995. 80 percent of its production is exported to European countries.

*Himstroy* consists of two different production units within the boundaries of one of the biggest cities in Russia. Unit 1 has been established as a greenfield project in 1995, and the Nordic owner acquired unit 2 (which itself had been established as a greenfield project ten years before) in 2006.

*Agrotehnika*'s production started at rented premises in a special economic zone in 2006, but it moved to current site in 2010. Operating in the metalworking sector, it found better qualified labour and logistics position on the current site.

*Mashina*'s business concept relies besides on high-quality products, also a comprehensive service and supply network throughout the country. Founded in 2002, it provided a different type of vehicles than it does nowadays; in 2010, when it established new production in rented premises on a different site, it brought some of the previous labour onto the new site.

Although *Stal* has operated in Russia in different premises since its establishment in 1993, some of the originally hired workers have followed it to the current site. Part of the production of standardised metal products is currently under disinvestment, part of it under re-investment.

*Provod* is a brownfield factory, history of which dates back to 1992. It was further sold to current owner in 2003. The work at the factory consists of cutting (males) and composition (females) of standardized products.

## **5. LEADERSHIP STYLE AND EMPLOYEE PARTICIPATION AT THE FIRMS**

At *Stroymaterial*, there was besides a small trade union, also a small committee established not a long time ago that discussed welfare issues such as the functioning of the canteen. It consisted of employees, union and management representatives. The management discussed mainly work-related issues with the union. One example of such issue had been a change in working schedule in one production section. There was a collective agreement signed in the factory for two years period at a time. Although wages were negotiated with the union, the management had the right to give individual bonuses in addition to the minimum tariffs. While consultation with union seems to be more or less commonplace, the union's real room to negotiate on important issues such as wages appeared to be restricted. A big factory as *Derevo* and *Himstroy*, *Stroymaterial* had a rather traditional management style in place, accompanied by some Nordic features of participative management.

*Derevo*'s production process was undergoing modernisation during the time of the interviews, although it still remained highly hierarchical. The work organization was traditional; there were 400 employees in the production, of which 20 were supervisors. The modernization meant that the number of employees was slightly decreasing and the work itself was intensifying. There was trade union and a collective negotiation committee in operation at *Derevo*, in a manner it does in the Nordic 'bargained constitutionalist' environment. The committee consisted of five members from the management and five members from the trade union. A representative of the management mentioned that they had to agree with the trade union upon some measures, such as during the crisis they had to agree on reduced working hours. There was a suggestion box for the initiatives of the workers, which is however little used. The management organised meetings with the whole workforce occasionally, and further *ad hoc* meetings with groups of workers. Such an approach to



employee relations resembled Nordic-type participative management, which in the Russian context is 'innovative'. However, the work organization itself remained bureaucratic.

At Himstroy's unit 1, a trade union established as an independent organization had deliberately assumed an aggressive stance against the employer, and the action of the union had been destructive to the company during the 2000s. The trade union in question was not involved in attestation of jobs, and the idea was obviously to marginalize this union for the favour of another union, which held a strong position at the unit 2. The union at the unit 2 was consulted in work organisation related issues (e.g. the new pay system). There was no collective agreement at Himstroy, although the management was going to start a negotiation process. Such a partnership did not, however, bring forth any ultimate benefit for the union, since it was also by-passed in work-related consultation. In 2010, Himstroy's management initiated bimonthly / quarterly consultation meetings with those production workers who do not belong to trade union. In addition to this, there was an annual information event for all employees, which was going to be arranged quarterly. One might argue, therefore, that the employee-management relations at Himstroy had developed from openly adversarial to more co-operative. The diversified HR management strategies between the two units apparently derive from different sizes (unit 1 has 250 employees while unit 2 has 600) and from the management's desire to define industrial relations on the shop floor to their own liking (the marginalization of the trade union at unit 1).

Agrotehnika is a small investment of a Nordic company, operating in the metalworking sector. At the moment of the interviews, the premises underwent installations of new equipment, and full production was about to start in 2011 or 2012. Majority of the installation was carried out by the company's own employees. Due to the move from the old premises and the construction of the new ones, the number of personnel at Agrotehnika was very low, only about 30 persons. The employment figure was about to grow steadily once the composition process has been set up. The production is organized around a team, which made of one shift. As another production process will start its operation, there will be competition between the production teams (one team represents one product) in terms of performance, quality, cleanness, safety and discipline. On the other hand, large autonomy was allowed to the teams in terms of work organization related budget: the teams would be provided with some budgetary means for their own use. The organization of work followed the '5S' model, adopted from a West European sister unit. Besides such steps towards quality improvement, also participative HRM measures were taken. There was a mutual one to two hours meeting every week on work-related issues, where managers and employees got together. The general director devoted a lot of his time for the running of the production while simultaneously maintained a paternalist management style characteristic of such small-scale engineering shop. All in all, the leadership style was genuinely 'innovative' against Russian and even against Nordic backdrop.

Mashina's production stages were to a high degree standardised, which left employees little room for improvisation or discretion. However, in the spirit of continuous improvement, employees' suggestions were encouraged as regards improvements in the process, work safety or ergonomics. The managing director gave a twenty minutes talk to all the staff every second week concerning the future prospects, market situation and employment situation in the factory. There was no trade union at the factory. As regards management style at Mashina, some clues can be discerned about it in the attitude toward the labour force on one hand, and in the managerial talk. The production manager emphasized that there is a difference in productivity between a Nordic production unit and Mashina, which is due to lower investment levels at the Russian factory. However, wages of the core workers were relatively good in the Russian context. Moreover, the way the managing director spoke of trust between the management and employees and the procedure of the recruitment process hint at some sort of

paternalism in this factory. He insisted in the mutuality of keeping one's promises (concerning both the employer and employees) and a close scrutiny of workers to be hired. In the process of recruiting (which was performed through a labour agency in the first place) and workplace learning, the 'bad' and unmotivated workers leave and the 'good' and committed workers remain. Although there were some signs of paternalist managerial style, in the Russian environment the leadership style could be characterized as 'innovative', which was mainly due to the small-step policy of investments and the small size of the factory for the time being.

One of Stal's departments, which is producing a more traditional and standardised product, was currently undergoing disinvestment. Another, however, was in the process of reinvestment, and the whole factory was subject to optimisation activities for reducing complexity and prices. There was no trade union neither any other employee representation system at Stal. However, there was an elected representative from Stal for the company's European Information and Consultation Forum (EICF). In terms of management style, it was obvious that there are some features of paternalism at Stal, although there was a strong emphasis on a Nordic-type participatory management. An interviewed manager underscored the openness of the corporate culture, where the management tries to listen to the employees and to enter into dialogue with them. Involvement and commitment of workers was mainly sought to be reached by means of continuous improvement, which implies employee participation in production-related issues. For the blue-collar workers, company goals were not promoted by individual performance-based pay schemes but instead occasional bonuses and non-monetary rewards were promoted. There was an extra allowance and medical insurance (not very extensive) for retired workers, which was 'means-tested' in a way that one had to have completed a ten-year blameless career at the company. Such a paternalist style – which indeed has analogies with the Soviet labour process – would prove unsustainable in case the number of workers will increase and this medium-sized engineering shop will grow into a larger factory.

Provod had recently introduced a quality control system where in each month, the department chief held personal development talks and evaluated the subordinate's performance based on a set of quality indicators. The goal of closer monitoring was to optimise the labour process, which would result in intensification of work. There was a trade union at Provod, and a collective agreement. The management director had a monthly meeting with the trade union chairperson. Also, the HR manager has daily communication with the union chair. Employee relations had changed from adversarial to more co-operative during latest years. For example, the number of the workers' complaints to the labour inspectorate had sharply decreased, where the management and employee representatives had managed to resolve problems within the company. The trade union had been more militant in the beginning stage, when it was established in 2003. According to a representative of management, the chairperson of the union sought more conflicts and not compromises with the directors. The collective agreement was one of the most comprehensive ones, including e.g. wage tariffs and grounds for bonus schemes (which is a rarity among the case study companies). One might conclude, therefore, that the management style at Provod was nearest to 'bargained constitutionalism'. It remains to be seen, however, whether the style turns into true partnership or traditional style in the future. At the time of the interviews, neither real problem-solving teams nor genuine employee involvement took place at Provod, which leads us to a conclusion that the organization of work was far more bureaucratic (and Tayloristic) than organization around innovative HRM would require.

## 6. THE 'INNOVATIVENESS' OF HRM IN THE CASE STUDY COMPANIES

The analysis shows that the innovative HRM features have been put into practice at the researched companies as follows (Table 2):

*Table 2: Adoption of innovative HRM practices in the case study companies*

HRM practice	Stroy-material	Derevo	Himstroy	Agrotehnika	Mashina	Stal	Provod
Enhanced communication	–	–	x**	x	x	–	–
Careful recruiting	x	–	–	x	x	x	–
Flexibility in job design	–	–	–	x	–	x	–
Problem-solving teams	–	–	–	x	–	–	–
Enhanced training	–	–	–	x	x	–	–
Employment security*	x	–	–	–	–	x	–
Incentive pay plan	x	x	x	x	x	x	x

\*) this indicator has been derived from personnel policies aimed at retention of workers and the accounts of labour turnover. For example, the personnel policy of hiring mainly temporary auxiliary staff is considered as increasing job insecurity

\*\*\*) concerns production unit 2 only

Source: Adapted from Ichiowski and Shaw, 2000

Stroyaterial had put some enhanced information and consultation channels into practice, including the co-operation with the trade union and small consultative committee involved in welfare issues. Thus, there was a mix of Soviet welfare participation and Nordic incorporation participation with the union not having such powers with which Nordic unions are typically provided. Enhanced communication at Himstroy only concerned the workers at unit 2, where employee-management relations had developed from openly adversarial to more co-operative and where communication and information sharing schemes were in place. The communication policy at Mashina mainly involved the managing director's twenty-minute talk to the employees every second week concerning the future prospects, market situation and employment situation in the factory. Agrotehnika incorporated only one small shop at the time of the interviews, and there was a possibility to get together and discuss work-related issues from one to two hours per week. The management at Stal provided the workers with quite a wide range of information and consultation possibilities, which was not, however, sufficient for enhanced communication, which is one prerequisite of innovative HRM. Employee information and consultation was based on email to supervisors (which they consequently spread to the workers), notice boards, an annual employee perception survey plus *ad hoc* meetings between management and employees. There was neither trade union nor

any other employee representation system at Stal. Instead, Stal had an elected representative for the company's European Information and Consultation Forum (EICF). However, there was no chance for blue-collar workers to be elected for the EICF due to the requirement of English language skills. Instead, Provod might have had potential for the Nordic-type 'bargained constitutionalism' with its trade union consultation and collective bargaining, but however it did not fulfil the idea of enhanced communication and information sharing in such manner that employees could understand the effect of their job effort on the firm's performance.

The personnel manager at Stroyaterial emphasized the selection of 'right' people with an appropriate attitude. In similar vein, the recruitment policy was careful at Agrotehnika, where the managing director personally had talks with the candidate in order to make sure of his or her experience, skills and motivation. Also at Stal the management paid a lot attention to employee selection; there the emphasis was on obtaining highly skilled workers with the ability and interest in solving problems.

Flexible job design was brought into use at Agrotehnika as the factory workers were in charge of installation jobs as well. Job design at Stal enables job rotation, although flexibility in the form of using one's skills to switch between operations jobs, limited maintenance, or problem solving (which would be required in strict sense in innovative HRM) is not supported. However, the pursuit for job rotation itself *within a team* is a step towards the introduction of an innovative HRM system.

At Agrotehnika the team – while only one team was functioning at the time of the interviews – was responsible for its own budget for launching their production site. One might argue that the team design at Agrotehnika was unique among the case study companies as regards teams, which resembled job enrichment in semi-autonomous workgroups typical of Scandinavian work organisations (Frohlich and Pekruhl 1996, 7).

There were particular resources for enhanced training allotted to Agrotehnika's workers. Practically every month some of the workers went to different courses in order to enhance their skills at the company's cost. The company actively supported the gaining of new knowledge. Mashina's enhanced training concerned the obtaining of new skills levels to achieve the capability to work at different work places. In the training, problem-solving skills were promoted in the spirit of continuous improvement.

By definition, employee security is based on the workers' feeling that they are valued and trusted. Such an attitude towards the workers was discerned in the interviews with Stroyaterial's managers and employees, and further confirmed in the low labour turnover (5 percent). Employee security is promoted at Stal with tenure-based fringe benefits such as extra medical insurance. Also, the fact that many old workers have followed the company even though production location has changed implies considerable security, as does low labour turnover.

Not surprisingly in the Russian context, incentive pay scheme constituted the most prominent feature of innovative HRM practices in the case study companies. Analogously to Hollinshead's (2007, p. 239) remarks, there had been a shift from the low standardized pay peculiar to the Soviet system to management-led formulation of pay policies at enterprise level. Indeed, a wide variety of ways of remuneration had been put into practice, and the trend was towards even more flexible pay schemes. For example, the salary system at Derevo was in a process of change at the time of the interviews. In the production, the fixed, hourly part of the salary constituted 30-60 percent of the salary, depending on the department.

The changing part of the salary depended on individual performance (piece rate) and a number of other measures. Himstroy cultivated team-based or individual bonuses could amount to 20-40 percent of the salary. At Mashina, employees were able to get a higher grade through an annual review in compliance with the fulfilment of a number of requirements. Additionally, the employees were able to get an extra 250 euro quarterly bonus based on the

key performance index of the company. Provod's piecework pay system was also based on an incentive pay plan, where individual quality indicators could be determined up to 30 percent of one's salary.

## 7. CONCLUSION

It was found that Nordic managers have certain latitude to choose their leadership style, although factory size and the scale of investment (small-scale vs. large-scale) set constraints for Nordic HRM in Russia. It is evidenced that especially in case of acquisitions or brownfield investments, there is some hold-over from the Soviet organization of work. This is the key to whether managements opt for the 'innovative' or 'bureaucratic' leadership style.

At factories having Soviet background in terms of human resources or location and of a larger size (Derevo, Himstroy, Provod and Stroymaterial), a Nordic-type 'incorporation participation' or Soviet-style 'welfare participation' model was more likely to be applied, although however more or less bureaucratic management was still prevailing. On the other hand at smaller workshops (Agrotehnika, Mashina and Stal), there was a peril that innovative leadership turns out to resemble (also Soviet-type) paternalism. There was one 'nearly' case of innovative leadership, that is the 'Agrotehnika' case. Still, there were more 'nearly' bureaucratic cases, which lead to a conclusion that managements prefer traditional bureaucratic management methods to innovative ones. In most cases the style adopted by Nordic managements mostly took a hybrid form involving both innovative and bureaucratic styles.

Given the strong organizational culture characterized by a resource-based view to the personnel, incorporation participation and the 'delegated responsibility' model cultivated in the companies' homelands, a greater degree of rejection of the Soviet-style paternalism and bureaucratic management would have been expected. Contrary to expectations that the innovative HRM system would have been implemented at the factories as a 'best practice', the 'best fit' approach to personnel management was preferred by the Nordic industrial companies operating in Russia.

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*Atıl Taşer, Özüm Eğilmez, Gözde Koca*

## 2.5 FUZZY TOPSIS METHOD FOR EVALUATION OF OUTSOURCING STRATEGIES

**Summary:** This paper seeks to investigate the impacts of criteria on evaluation of suppliers, as well as the elements that make the supplier as “the preferred” one.

The Fuzzy TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) method is used to examine the studied firm’s suppliers and find out the important criteria on evaluation of the suppliers. The core of TOPSIS method provides two main solutions; that is by ranking method of the mean of the integral values is applied to help derive the ideal and negative-ideal fuzzy solutions. The ideal and negative-ideal fuzzy solutions open the path to calculate the closeness coefficients. A supplier assessment questionnaire was conducted to three executives who actively work as decision makers on supplier issues of the studied firm. Via questionnaire and interviews, the leading and lagged elements of supplier assessment are sorted by closeness coefficients calculated.

The proposed method is chosen because it is typically used in multi criteria decision-making problems. Supplier topic itself, containing a process of selection (right quality, right price, right time, right quantities etc.), is also a problem for companies hence containing multiple criteria to establish a desirable supply chain which is a core issue of outsourcing.

This study helps the management to identify and sort the importance of criteria and the indicators to enhance the performance of their suppliers and their own business performance eventually.

**Keywords:** Supplier Chain Management, Outsourcing, Fuzzy TOPSIS, Supplier Assessment

### 1. INTRODUCTION

Managing the outcomes of globalisation firms generally acts two-sided; the first one is quality and the other one is cost effectiveness. In essence, to gain and sustain competitive advantage firms needed to be in business of total quality management logic where the supplier stands as the origin of the process. Required products and services must be provided with quality-oriented drive under some standards and intended value creation. Moreover, achieving standard quality; the right time, location and quantity become substantive as well.

In order gain success in cost effectiveness the principal thought is to lower the costs by outsourcing that refers to terminate activities excluded in value-creation. Besides, just in time production model with an aspect of desired quantity with minimum stock and storage cost became visible in the current business market. As this production logic emerge for the firms, the selection of supplier and establishment of relationship become more and more important.

In terms of providing success, the suppliers needed to be on the same logic and support the focal firm by all means. In this point, suppliers and firms should not be estimated separately as they are strictly bonded. Various factors such as organizational goals and risks, resources, benefits and capabilities have to be taken into consideration to evaluate and find the right supplier to work via win-win situation. Every criterion may be unique for firms, however, decision and selection period differ as mutual benefits are sought and criterial ranking differs firm to firm. To sustain the relationship short and long-term agreements are generally preferred as the affection is mutual as well.

Due to importance of supplier selection where many criteria needed to be evaluated, a systematic method of fuzzy TOPSIS is being used in this study. To decide the right supplier which is a multi-criteria problem for firms, we have done an evaluation in an aluminium company runs business in Bilecik city of Turkey through modifying TOPSIS tend to be an

effective evaluation approach. In this study, we have identified some criteria in order to select the appropriate supplier and decision makers rated them in terms of importance. Modifying TOPSIS model presented which supplier has the significant importance. With previous studies in various industries, we tend to provide decision makers more information to make subtle decisions which is the sight of this paper.

## 2. LITERATURE REVIEW

The decision problem of selection suppliers can be a complex task as it generally relies on decision makers' judgement with lack of inadequate information and uncertainty, which makes the selection and evaluation process problematic. In the literature, evaluation and performance calculated via using various methods. Fuzzy TOPSIS being one of them, aimed to define alternative criteria are those under consideration requiring reliable solution.

The studies under the name of supplier selection are done in United States, as Dickson (1966) is one of first. In that study, 23 criteria were used as product quality, on time delivery and warranty policy emerged as the leading criteria (Dickson, 1966: 16-17). Liu and Hai (2005) used the criteria of quality, taking responsibility, delivery, financial structure, management, technical capacity, and convenience in supplier evaluation and selection process. Pi and Low (2006) has preferred the criteria of quality, on time delivery, price and service. Dağdeviren and Eren (2001) have chosen one out of four suppliers due to quality, supply performance, cost and technology criteria.

In other study, Küçük and Ecer (2007) have used fuzzy TOPSIS method evaluation of suppliers by using 17 criteria. Durdudiler (2006) used criteria of sales performance, delivery, product return frequency, collaboration, and innovation to determine supplier performance by analytical hierarchy process. Because of ranking the criteria in terms of importance, sales performance was the most important while the sorting continued with delivery, collaboration, product return frequency, and innovation. In order to select the right project, fuzzy TOPSIS method was used and resulted with an ideal model in construction industry (Onursal, 2009).

## 3. FUZZY SET APPROACH

Fuzzy set has theory been introduced by Zadeh (1965) that is an effective approach referring vagueness and ambiguity of the human decision making process (Ecer, 2007). Real world is full of uncertain data in many technical and economical subjects. Fuzzy set approach mainly deals with inherent imprecision while it is also suitable for mathematical programming in the field.

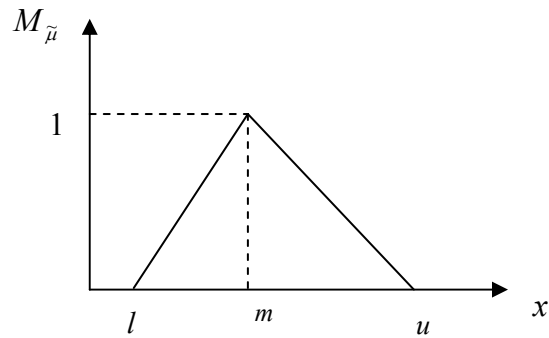
In practice the use of triangular and trapezoidal fuzzy numbers are common. Triangular numbers are used in this study. The membership function of a triangular fuzzy number is shown as  $\tilde{\mu}$ . Basicly, a triangular fuzzy number is identified as  $(l/m/u)$  or  $(l,m,u)$ . Parameters of  $l$ ,  $m$  and  $u$  are; least probable value, the most expected value and the most probable value in order. A triangular membership function is shown in Figure.1 (Özdemir and Seçme, 2009:85-86).

Each triangular fuzzy number has a linear indication of its left and right side and the indication of membership function is shown as below:

$$\mu(x|\tilde{M}) = \begin{cases} 0, & x < l, \\ (x-l)/(m-l), & l \leq x \leq m, \\ (u-x)/(u-m), & m \leq x \leq u, \\ 0, & x > u \end{cases}$$



**Figure 1.: Triangular membership function,  $\tilde{\mu}$**



Source: Özdemir and Seçme, 2009

#### 4. FUZZY TOPSIS METHOD

TOPSIS method can be formulated as;  $n$  – dimensional field,  $m$  dotted geometric system with  $m$  alternative decision-making problem. In basis of alternative selection concept, the chosen alternative should have shortest distance to positive ideal solution while longest distance to negative ideal solution. An identified index of maximization of positive ideal solution and minimization of negative ideal solution determine which alternative is more beneficial with the ideal solution (Yoon and Hwang, 1995).

In literature, there are several fuzzy TOPSIS methods as their differences refer techniques or the numbers used. In some studies triangular fuzzy numbers were chosen while in the other the trapezoid ones. Addition to fuzzy numbers to facilitate the making of solution for group decisions and in linguistic uncertainty, some variables are used which apply words or sentences in a natural or artificial language to describe its degree of value. Fuzzy linguistic terms and their values per criteria are as mentioned below:

**Table 1: Fuzzy Linguistic Terms and Their Values per Each Criterion in Triangular Numbers**

Very High	(0,9, 1, 1)
High	(0,7, 0,9, 1)
Medium High	(0,5, 0,7, 0,9)
Medium	(0,3, 0,5, 0,7)
Medium Low	(0,1, 0,3, 0,5)
Low	(0, 0,1, 0,3)
Very Low	(0, 0, 1)

Source: Nguyen et. al., 2008

**Table 2: Fuzzy Linguistic Terms and Their Values per Each Alternative in Triangular Numbers**

Very High	(9, 10, 10)
High	(7, 9, 10)
Medium High	(5, 7, 9)
Medium	(3, 5, 7)
Medium Low	(1, 3, 5)
Low	(0, 1, 3)
Very Low	(0, 0, 1)

Source: Nguyen et. al., 2008.

The steps of fuzzy TOPSIS method are the following:

Step 1: Determining decision makers and selection of criteria

Step 2: Determining the weights of the criteria.

Step 3: Normalize the decision matrix

Step 4: Calculate the aggregate weights for decision matrix.

Step 5: Determine the positive and negative solution.

Step 6: Calculate the distance from the positive ideal solution and the negative ideal solution for each alternative.

Step 7: Calculate the closeness coefficients.

Step 8: Rank the alternatives according to closeness coefficients.

Assume that in a sum of K decision maker with  $x_{ij}^k$ 's i. alternative's criteria value group; the formula for determination of alternative criterion as below:

$$\tilde{x}_{ij} = \frac{1}{K} [x_{ij}^{-1} (+) x_{ij}^{-2} (+) \dots (+) x_{ij}^{-K}] \quad (1)$$

$w_j^k$ 's Formula for weights of importance of the group included j. decision criteria:

$$\tilde{w}_j = \frac{1}{K} [w_j^{-1} (+) w_j^{-2} (+) \dots (+) w_j^{-K}] \quad (2)$$

Normalization of decision matrix:

$$\tilde{r}_{ij} = \left( \frac{\tilde{a}_{ij}}{c_j^*}, \frac{\tilde{b}_{ij}}{c_j^*}, \frac{\tilde{c}_{ij}}{c_j^*} \right) \quad j, \text{ benefit related criteria} \quad (3)$$

$$\tilde{r}_{ij} = \left( \frac{a_j^-}{c_{ij}}, \frac{a_j^-}{b_{ij}}, \frac{a_j^-}{a_{ij}} \right) \quad j, \text{ cost related criteria} \quad (4)$$

While:

$$c_j^* = \max_i c_{ij}, j \in B \quad (5)$$

$$a_j^* = \min_i a_{ij}, j \in C \quad (6)$$

Multiplying the aggregate weights for each normalized criterion:

$$\tilde{V} = [\tilde{v}_{ij}]_{m \times n}, i = 1, 2, \dots, m, \quad j = 1, 2, \dots, n \quad (7)$$

$$\tilde{v}_{ij} = w_j \otimes \tilde{r}_{ij} \quad (8)$$

Determining positive and negative ideal solutions:

$$A^* = (\tilde{v}_1^*, \tilde{v}_2^*, \dots, \tilde{v}_n^*) \quad (9)$$

$$A^- = (\tilde{v}_1^-, \tilde{v}_2^-, \dots, \tilde{v}_n^-) \quad (10)$$

Calculation of the distance from the positive ideal solution and the negative ideal solution for each alternative (Önüt and Soner, 2007):

$$d_i^* = \sum_{j=1}^n d(\tilde{v}_{ij}, \tilde{v}_j^*), \quad i = 1, 2, \dots, m \quad (11)$$

$$d_i^- = \sum_{j=1}^n d(\tilde{v}_{ij}, \tilde{v}_j^-), \quad i = 1, 2, \dots, m \quad (12)$$

Ultimately calculation of the closeness coefficients and ranking of the alternatives accordingly:

$$CC_i = \frac{d_i^-}{d_i^* + d_i^-}, \quad i = 1, 2, \dots, m \quad (13)$$

## 5. METHODOLOGY

We aimed to rank the suppliers identifying the benefit scores using fuzzy TOPSIS method. The investigation is done in an aluminium company that has extrusion production, surface treatment, anodising unit, power coating line, mechanical treatment, shrink and cast house.

The studied firm has a 42-year business experience in the industry and is placed as 18th in the 2nd top 500 leading industrial companies' list constituted by ISO (İstanbul Chamber of Industry). Main reason to investigate this company as a case study is; collaboration with numerous suppliers, exporting products in ratio of 42% of total sales, and being one of the leader companies in related industry.

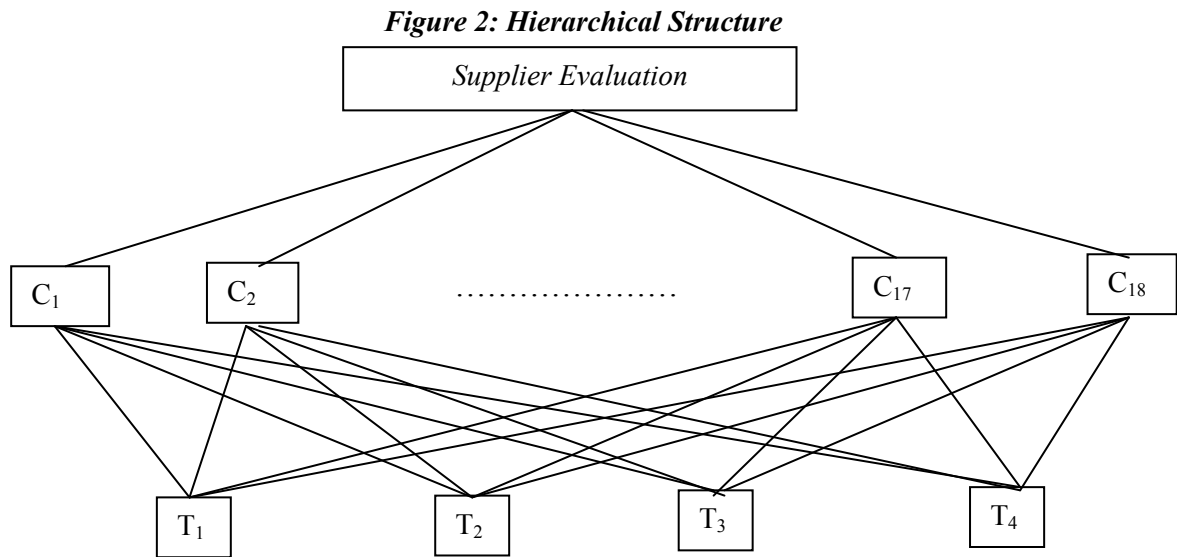
The suppliers included in our method were selected by procurement director and production manager as decision makers. In accordance with decision-makers' perspective and the previous studies were the major steps of criteria assignment. In-depth interview was conducted with duration of 58 min. to collect the data regarding the criteria. We have adopted 18 criteria from Küçük and Ecer (2007) study. Both procurement director and production manager evaluated four suppliers according to importance level of the given criteria. The evaluation form of importance levels of the criteria is shown at Appendix-1.

## 6. SUPPLIER EVALUATION BY FUZZY TOPSIS METHOD

Decision makers (DM1, DM2) have evaluated for suppliers (S1, ..., S4) according to decision criteria (C1, ..., C18) mentioned below:

- |  |   |
|--|---|
| (C <sub>1</sub> ) Price offered by supplier                | (C <sub>10</sub> ) Wealth of supplier                 |
| (C <sub>2</sub> ) Transportation cost                      | (C <sub>11</sub> ) Reputation                         |
| (C <sub>3</sub> ) Quality of product                       | (C <sub>12</sub> ) Production ability and capacity    |
| (C <sub>4</sub> ) Zero defected product                    | (C <sub>13</sub> ) Taking responsibility              |
| (C <sub>5</sub> ) Supplier's effort in quality improvement | (C <sub>14</sub> ) Resolution of conflicts            |
| (C <sub>6</sub> ) Holding a quality certificate            | (C <sub>15</sub> ) Production of exact order quantity |
| (C <sub>7</sub> ) Reliable for on time delivery            | (C <sub>16</sub> ) Delivery packing included          |
| (C <sub>8</sub> ) Compatibility on demand change           | (C <sub>17</sub> ) Technological level                |
| (C <sub>9</sub> ) Easy to communicate                      | (C <sub>18</sub> ) Geographical distance              |

The hierarchical structure of decision problem is shown in Figure 2, and the procedure can be summarized as:



In Figure 2, decision-makers evaluate the decision criteria via linguistic variables. The assessment is shown in Table 3. As referring to formula (2), the most important criteria were “production of exact order quantity” according to decision makers.

**Table 3: Assessment of Decision Criteria and Weight of Importance by Decision Makers**

	$DM_1$	$DM_2$	Weight of Importance
$C_1$	H	M	(0.50, 0.70, 0.85)
$C_2$	H	M	(0.50, 0.70, 0.85)
$C_3$	VH	H	(0.80, 0.95, 1.00)
$C_4$	VH	MH	(0.70, 0.85, 0.95)
$C_5$	MH	MH	(0.50, 0.70, 0.90)
$C_6$	VH	MH	(0.70, 0.85, 0.95)
$C_7$	VH	H	(0.80, 0.95, 1.00)
$C_8$	H	H	(0.70, 0.90, 1.00)
$C_9$	H	MH	(0.60, 0.80, 0.95)
$C_{10}$	VH	MH	(0.70, 0.85, 0.95)
$C_{11}$	H	H	(0.70, 0.90, 1.00)
$C_{12}$	MH	VH	(0.70, 0.85, 0.95)
$C_{13}$	H	VH	(0.80, 0.95, 1.00)
$C_{14}$	VH	H	(0.80, 0.95, 1.00)
$C_{15}$	VH	VH	(0.90, 1.00, 1.00)
$C_{16}$	VH	M	(0.60, 0.75, 0.85)
$C_{17}$	H	H	(0.70, 0.90, 1.00)
$C_{18}$	H	M	(0.50, 0.70, 0.85)

VH: Very High, H: High, MH: Medium High, M: Medium, ML: Medium Low, L: Low, DM: Decision Maker  
Source: By authors

Similar result was found in a study of textile industry; the order inconsistency was an important criteria needed to be considered in supplier evaluation (Taşer and Eğılmez, 2011). Second important criteria emerged as quality of product, being reliable for on time delivery,

taking responsibility and resolution of conflicts while for the third one as; compatibility on demand change, reputation, technological level. In the order of importance, the fourth consisted of zero defected products, holding a quality certificate, wealth of supplier, production ability, and capacity. The fifth included Easy to communicate; the sixth Delivery packing included; the seventh Supplier’s effort in quality improvement and the last important criteria ranked were price offered by supplier, transportation cost, and geographical distance.

According to Table 2. decision-makers used fuzzy linguistic terms in evaluation of the suppliers. After the evaluation the linguistic terms converted into fuzzy triangular numbers where fuzzy decision matrix, normalized fuzzy decision matrix and aggregated weight fuzzy decision matrix were derived from. Appendix-2, Appendix-3 and Appendix-4 refer to fuzzy decision matrix, normalized fuzzy decision matrix and aggregated weight fuzzy decision matrix in order. Following,  $A^*$  (FPIS- fuzzy positive ideal solution ) and  $A^-$  (FNIS- fuzzy negative ideal solution) were determined. As the decision criteria composed of 18 criteria, meaning that n=18, by using equations of number (9) and (10) it is accepted as below (Chen, 2000:1-9);

$$A^*=[(1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1), (1, 1, 1)]$$

$$A^-=[(0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0)]$$

Using normalized fuzzy decision matrix, FPIS and FNIS values are calculated. To calculate the distance from FPIS, the members of aggregated weight fuzzy decision matrix extracted from (1, 1, 1). By using Vertex method, FPIS values are calculated via formula no.(11).

Similarly to calculate FNIS, the members of aggregated weight fuzzy decision matrix extracted from (0, 0, 0). By using Vertex method, FNIS values are calculated via formula no.(12).

$$\left. \begin{aligned} &\sqrt{\frac{1}{3}[(1-0,400)^2 + (1-0,665)^2 + (1-0,850)^2]} = 0,4061 \\ &\cdot \\ &\cdot \\ &\cdot \\ &\cdot \\ &\sqrt{\frac{1}{3}[(1-0,450)^2 + (1-0,700)^2 + (1-0,800)^2]} = 0,3719 \end{aligned} \right\} d_1^* = 5,1135$$

and

$$\left. \begin{aligned} &\sqrt{\frac{1}{3}[(0-0,400)^2 + (0-0,665)^2 + (0-0,850)^2]} = 0,6645 \\ &\cdot \\ &\cdot \\ &\cdot \\ &\cdot \\ &\sqrt{\frac{1}{3}[(0-0,450)^2 + (0-0,700)^2 + (0-0,800)^2]} = 0,6868 \end{aligned} \right\} d_1^- = 14,2091$$

In the same way, FPIS and FNIS values are calculated for the alternative suppliers where the results are shown in Table. 4 below.

**Table 4: The Distance from  $A^*$  and  $A^-$**

<i>Suppliers</i>	<i>Distance From <math>A^*</math></i>	<i>Distance From <math>A^-</math></i>
S <sub>1</sub>	5,1135	14,2091
S <sub>2</sub>	5,7419	13,5758
S <sub>3</sub>	11,1163	8,0817
S <sub>4</sub>	7,8574	11,5754

Source: By Authors

Meaning as the scores, closeness coefficients (CC) and rank order of the suppliers are mentioned as in Table 5 below. Exemplary CC for the first supplier is  $CC_i = (14,2091) / (5,1135 + 14,2091) = 0,7354$ .

**Table 5: CC and Rank Orders of Suppliers**

<i>Suppliers</i>	<i>CC<sub>i</sub></i>	<i>Rank Order</i>
S <sub>1</sub>	0,7354	1
S <sub>2</sub>	0,7028	2
S <sub>3</sub>	0,4210	4
S <sub>4</sub>	0,5957	3

Source: By Authors

As it can be seen from Table 6, in terms of rank order supplier with highest CC is the best. Thus, the best choice of suppliers is as  $S_1 > S_2 > S_4 > S_3$ .

## 7. CONCLUSION

In this study we aimed to evaluate four suppliers of an aluminium firm operated in Bilecik under the subject of supplier chain- supplier choice tested via TOPSIS method. According to TOPSIS method, two decision makers responsible for purchasing evaluated alternative suppliers and determined 18 criteria attained the objective of the firm. First, DMs assessed the weights of decision criteria by the linguistic terms of very high, high, medium high, medium, medium low, low, very low and after assessed four alternative suppliers as very good, good, medium good, normal, low good and not good.

One of the most important character of TOPSIS method is to enable giving different weight of importance to decision criteria. In this way, assessment's accuracy and reliability increases. The most important criteria of DMs were "reliable for on time delivery". The assessment using linguistic terms were converted into fuzzy triangular number and in accordance with the TOPSIS algorithm; the aggregated weights and the closeness coefficients for each supplier were calculated and finally ranked in order. In ranking, the first supplier recommended as the best supplier. According to closeness coefficients for each supplier, first ranking with the highest CC is of S<sub>1</sub>. Furthermore, CC scores of S<sub>1</sub> and S<sub>2</sub> were in a very close range (0.7354- 0.7028) and draws attention. In situations such as the characteristic of the suppliers alike where making decisions is hard, TOPSIS method happens to be helpful in decision process. The most important factor in implication is, to reach the professionals as decision makers in the industry. In this context, decision makers should be objective, the criteria needed to be settled correctly and so the alternatives and the criteria can be assessed

accurately. As fuzzy TOPSIS method is very helpful on the supplier selection in the study, it can be used in various industries where the linguistic terms adequate for comparing many decision criteria to reach the alternatives. It also can be used when the group decision in question such as; human resources management, marketing management, production management and management and organization fields.

Further studies can be done by using ELECTRE, PROMETHEE, VIKOR, VZA, AHP methods as an alternative. The comparison of the findings can be helpful to gain different dimensions for selecting the right supplier.

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*Appendix-1 Evaluation of criteria for the importance level*

CRITERIA	Very H,gh	High	Medium High	Medium	Medium Low	Low	Very Low
Price offered by supplier							
Transportation cost							
Quality of product							
Zero defected product							
Supplier's effort in quality improvement							
Holding a quality certificate							
Reliable for on time delivery							
Compatibility on demand change							
Easy to communicate							
Wealth of supplier							
Reputation							
Production ability and capacity							
Taking responsibility							
Resolution of conflicts							
Production of exact order quantity							
Delivery packing included							
Technological level							
Geographical distance							

*Appendix-2 Fuzzy Decision Matrix*

	<i>c7</i>	<i>c8</i>	<i>c9</i>	<i>c10</i>	<i>c11</i>	<i>c12</i>
<i>T1</i>	(9, 10, 10)	(9, 10, 10)	(8, 9.5, 10)	(8, 9.5, 10)	(7, 9, 10)	(8, 9.5, 10)
<i>T2</i>	(8, 9.5, 10)	(5, 7, 8.5)	(8, 9.5, 10)	(9, 10, 10)	(8, 9.5, 10)	(7, 8.5, 9.5)
<i>T3</i>	(4, 6, 8)	(5, 7, 8.5)	(3, 5, 7)	(1, 3, 5)	(3, 5, 7)	(1.5, 3, 5)
<i>T4</i>	(6, 8, 9.5)	(4, 6, 8)	(5, 7, 8.5)	(3, 5, 7)	(7, 9, 10)	(5, 7, 9)

	<i>c1</i>	<i>c2</i>	<i>c3</i>	<i>c4</i>	<i>c5</i>	<i>c6</i>
<i>T1</i>	(8, 9.5, 10)	(9, 10, 10)	(8, 9.5, 10)	(7, 9, 10)	(7, 9, 10)	(9, 10, 10)
<i>T2</i>	(7, 9, 10)	(6, 7.5, 8.5)	(8, 9.5, 10)	(8, 9.5, 10)	(8, 9.5, 10)	(9, 10, 10)
<i>T3</i>	(5, 7, 8.5)	(4, 6, 8)	(2, 4, 6)	(1, 3, 5)	(1, 3, 5)	(0, 0.5, 2)
<i>T4</i>	(6, 8, 9.5)	(3, 5, 7)	(6, 8, 9.5)	(6, 8, 9.5)	(3, 5, 7)	(5, 7, 8.5)

	<i>c13</i>	<i>c14</i>	<i>c15</i>	<i>c16</i>	<i>c17</i>	<i>c18</i>
<i>T1</i>	(9, 10, 10)	(8, 9.5, 10)	(8, 9.5, 10)	(8, 9.5, 10)	(8, 9.5, 10)	(9, 10, 10)
<i>T2</i>	(6, 8, 9.5)	(8, 9.5, 10)	(9, 10, 10)	(9, 10, 10)	(7, 9, 10)	(5, 7, 8.5)
<i>T3</i>	(3.5, 5, 6.5)	(0.5, 2, 4)	(3, 5, 7)	(5, 7, 8.5)	(5, 7, 8.5)	(8, 9.5, 10)
<i>T4</i>	(6, 8, 9.5)	(5, 7, 9)	(7, 9, 10)	(7, 9, 10)	(6, 8, 9.5)	(4, 6, 8)



**Appendix-3 Normalized Fuzzy Decision Matrix**

	<i>c1</i>	<i>c2</i>	<i>c3</i>	<i>c4</i>	<i>c5</i>	<i>c6</i>
<i>T1</i>	(0.8, 0.95, 1)	(0.9, 1, 1)	(0.8, 0.95, 1)	(0.7, 0.9, 1)	(0.7, 0.9, 1)	(0.9, 1, 1)
<i>T2</i>	(0.7, 0.9, 1)	(0.6, 0.75, 0.85)	(0.8, 0.95, 1)	(0.8, 0.95, 1)	(0.8, 0.95, 1)	(0.9, 1, 1)
<i>T3</i>	(0.5, 0.7, 0.85)	(0.4, 0.6, 0.8)	(0.2, 0.4, 0.6)	(0.1, 0.3, 0.5)	(0.1, 0.3, 0.5)	(0, 0.05, 0.2)
<i>T4</i>	(0.6, 0.8, 0.95)	(0.3, 0.5, 0.7)	(0.6, 0.8, 0.95)	(0.6, 0.8, 0.95)	(0.3, 0.5, 0.7)	(0.5, 0.7, 0.85)

	<i>c7</i>	<i>c8</i>	<i>c9</i>	<i>c10</i>	<i>c11</i>	<i>c12</i>
<i>T1</i>	(0.9, 1, 1)	(0.9, 1, 1)	(0.8, 0.95, 1)	(0.8, 0.95, 1)	(0.7, 0.9, 1)	(0.8, 0.95, 1)
<i>T2</i>	(0.8, 0.95, 1)	(0.5, 0.7, 0.85)	(0.8, 0.95, 1)	(0.9, 1, 1)	(0.8, 0.95, 1)	(0.7, 0.85, 0.95)
<i>T3</i>	(0.4, 0.6, 0.8)	(0.5, 0.7, 0.85)	(0.3, 0.5, 0.7)	(0.1, 0.3, 0.5)	(0.3, 0.5, 0.7)	(0.15, 0.3, 0.5)
<i>T4</i>	(0.6, 0.8, 0.95)	(0.4, 0.6, 0.8)	(0.5, 0.7, 0.85)	(0.3, 0.5, 0.7)	(0.7, 0.9, 1)	(0.5, 0.7, 0.9)

	<i>c13</i>	<i>c14</i>	<i>c15</i>	<i>c16</i>	<i>c17</i>	<i>c18</i>
<i>T1</i>	(0.9, 1, 1)	(0.8, 0.95, 1)	(0.8, 0.95, 1)	(0.8, 0.95, 1)	(0.8, 0.95, 1)	(0.9, 1, 1)
<i>T2</i>	(0.6, 0.8, 0.95)	(0.8, 0.95, 1)	(0.9, 1, 1)	(0.9, 1, 1)	(0.7, 0.9, 1)	(0.5, 0.7, 0.85)
<i>T3</i>	(0.35, 0.5, 0.65)	(0.05, 0.2, 0.4)	(0.3, 0.5, 0.7)	(0.5, 0.7, 0.85)	(0.5, 0.7, 0.85)	(0.8, 0.95, 1)
<i>T4</i>	(0.6, 0.8, 0.95)	(0.5, 0.7, 0.9)	(0.7, 0.9, 1)	(0.7, 0.9, 1)	(0.6, 0.8, 0.95)	(0.4, 0.6, 0.8)

**Appendix-4 Aggregated Weight Normalized Fuzzy Decision Matrix**

	<i>c1</i>	<i>c2</i>	<i>c3</i>	<i>c4</i>
<i>T1</i>	(0.400, 0.665, 0.850)	(0.450, 0.700, 0.850)	(0.640, 0.902, 1.000)	(0.490, 0.765, 0.950)
<i>T2</i>	(0.350, 0.630, 0.850)	(0.300, 0.525, 0.722)	(0.640, 0.902, 1.000)	(0.560, 0.807, 0.950)
<i>T3</i>	(0.250, 0.490, 0.722)	(0.200, 0.420, 0.680)	(0.160, 0.380, 0.600)	(0.070, 0.255, 0.475)
<i>T4</i>	(0.300, 0.560, 0.807)	(0.150, 0.350, 0.595)	(0.480, 0.760, 0.950)	(0.420, 0.680, 0.902)

	<i>c5</i>	<i>c6</i>	<i>c7</i>	<i>c8</i>
<i>T1</i>	(0.350, 0.630, 0.900)	(0.630, 0.850, 0.950)	(0.720, 0.950, 1.000)	(0.630, 0.900, 1.000)
<i>T2</i>	(0.400, 0.665, 0.900)	(0.630, 0.850, 0.950)	(0.642, 0.902, 1.000)	(0.350, 0.630, 0.850)
<i>T3</i>	(0.050, 0.210, 0.450)	(0.000, 0.042, 0.190)	(0.320, 0.570, 0.800)	(0.350, 0.630, 0.850)
<i>T4</i>	(0.150, 0.350, 0.630)	(0.350, 0.595, 0.807)	(0.480, 0.760, 0.950)	(0.280, 0.540, 0.800)

	<i>c9</i>	<i>c10</i>	<i>c11</i>	<i>c12</i>
<i>T1</i>	(0.480, 0.760, 0.950)	(0.560, 0.807, 0.950)	(0.490, 0.810, 1.000)	(0.560, 0.807, 0.950)
<i>T2</i>	(0.480, 0.760, 0.950)	(0.630, 0.850, 0.950)	(0.560, 0.855, 1.000)	(0.490, 0.722, 0.902)
<i>T3</i>	(0.180, 0.400, 0.665)	(0.070, 0.255, 0.475)	(0.210, 0.450, 0.700)	(0.105, 0.255, 0.475)
<i>T4</i>	(0.300, 0.560, 0.807)	(0.210, 0.425, 0.665)	(0.490, 0.810, 1.000)	(0.350, 0.595, 0.855)

	<i>c13</i>	<i>c14</i>	<i>c15</i>	<i>c16</i>
<i>T1</i>	(0.720, 0.950, 1.000)	(0.640, 0.902, 1.000)	(0.720, 0.950, 1.000)	(0.480, 0.712, 0.850)
<i>T2</i>	(0.480, 0.760, 0.950)	(0.640, 0.902, 1.000)	(0.810, 1.000, 1.000)	(0.540, 0.750, 0.850)
<i>T3</i>	(0.280, 0.475, 0.650)	(0.040, 0.190, 0.400)	(0.270, 0.500, 0.700)	(0.300, 0.525, 0.722)
<i>T4</i>	(0.480, 0.760, 0.950)	(0.400, 0.665, 0.900)	(0.630, 0.900, 1.000)	(0.720, 0.675, 0.850)

	<i>c17</i>	<i>c18</i>
<i>T1</i>	(0.560, 0.855, 1.000)	(0.450, 0.700, 0.850)
<i>T2</i>	(0.490, 0.810, 1.000)	(0.250, 0.490, 0.722)
<i>T3</i>	(0.350, 0.630, 0.850)	(0.400, 0.665, 0.850)
<i>T4</i>	(0.420, 0.720, 0.950)	(0.200, 0.420, 0.680)

*Andrzej Parzonko*

## 2.6 ECONOMIC PLANNING ON FARMS – RELEVANCE, SPECIFIC CHARACTER, SCOPE

**Abstract:** Basic questions a farmer running a commercial farm has to keep asking himself are as follows: “What should I produce?” and “How should I manage production in order to achieve the defined target?”. The questions are still not easy to be answered, even despite the evident progress made. But it can be helpful to some extent to implement a proper process of economic and production planning on farms. As studies carried out at the Department of Economics and Organisation of Enterprises at Warsaw University of Life Sciences reveal, Polish farmers (regardless of their education, age, farm area and keeping accounts) believe that planning is necessary. They justify this fact in first place with better organisation of work and opportunities to earn higher income. Selection of proper parameters (related to production, prices and technology) is a relatively vital issue arising in development of plans.

The main objective of this article is to present methods of planning on family milk farms in Poland. Attention will be also drawn to methods of generating parameters required for planning in accordance with German solutions proposed by KTBL (*Das Kuratorium für Technik und Bauwesen in der Landwirtschaft*). The solutions are innovative and useful. This paper is a part of the research project entitled: “Economic and social conditions for regional changes in milk production and processing” (no.: 0890/B/H03/2010/39) funded by the Ministry of Science and Higher Education.

**Keywords:** farms, planning, standards and norms, standard costs

### 1. INTRODUCTORY ISSUES

The issue of planning in business entities has always been of central importance to the management system. As it was once remarked, it allows “order in a business activity” and makes it possible to take decisions not in a situation of pressure, but with enough time and space for making an optimal decision (Manteuffel, 1967). Planning is one of the basic processes thanks to which goals and methods of their implementation can be defined. Without plans, managers (owners) of business entities would be clearly limited in organizing activities and goal-oriented use of resources (Stoner, 2011). Planning has various definitions in reference literature, most frequently it is treated as a system process.

The process of planning is indispensable in most business entities, which operate on different levels of complexity of implemented processes. As studies carried out at the Department of Economics and Organisation of Enterprises at Warsaw University of Life Sciences reveal, Polish farmers (regardless of their education, age, farm area and keeping accounts) believe that planning is necessary. They justify this fact in first place with better organisation of work and opportunities to earn higher income (Bereźnicka, 2000).

The main objective of the article is to present methods of planning on family milk farms in Poland. Attention will be also drawn to methods of generating parameters required for planning in accordance with German solutions proposed by KTBL (*Das Kuratorium für Technik und Bauwesen in der Landwirtschaft*). This paper is a part of the research project entitled: “Economic and social conditions for regional changes in milk production and processing” (no.: 0890/B/H03/2010/39) funded by the Ministry of Science and Higher Education.

## 2. SPECIFIC CHARACTER OF THE PLANNING PROCESS ON FARMS

Agricultural economists rather agree that agriculture is a branch of economy exposed to specific environmental climate conditions and socio-cultural conditions (Tomczak, 2004). The specific role of agriculture is attributable also to the fact that it is a source of the most important product of humanity, which is food. As J. Wilkin points out “It doesn’t matter how long and complex the so called food chain is, how industrialised food production is and what a small part of the value of a final food product is attributable to a farmer. (...) Without the products, which are effects of a farmer’s work, the whole food chain is not justified” (Wilkin, 2005). Any differences between agriculture and other branches of national economy arise due to the character of agricultural production. In case of running this type of production, we make use of biological properties of plants and animals.

The production process takes place in organisms of living creatures, which are plants and animals, and the role of the human, who is the formal producer, boils down to creating the best possible conditions so that the living creatures are willing to develop, reproduce and put on weight (Manteuffel, 1987). In agricultural production (as opposed to most non-agricultural activities), the land continues to be an important production factor. Due to its specific characteristics (non-reproducibility, immobility, potential indestructibility, limited production capacity) agriculture has to abide by its own set of rules. Agriculture exhibits specifically a three-factor function stressing that productivity of the capital factor and labour factor is affected by the productivity of the land factor. The limited production capacity of the land translates, in turn, into a limited productivity of labour and capital (Rembisz, 2008). When an agricultural production is run, the land becomes a centre of production, and not a place such as a place (mostly) in other sectors of economy. It means that in agriculture the land is directly involved in the production, transferring fertilizer compounds onto plants, which grow on it. The possession of the land has been a basis for well-being and a source of social privileges for ages. This in turn gives rise to emotional attachment to the land known as patrimony, and in a broader sense - the homeland.

In running agricultural production, a critical role is assigned to the human – producer, who is a careful observer of the life of plants and animals, required to create for them conditions for the most efficient development (Manteuffel, 1987). The human in the agricultural production process acts like an entrepreneur, having at his disposal a great number of minor mini-producers, which are plants and animals. A farmer has to watch the course of life of plants and animals, and based on that, he has to create for them optimal conditions for development. In most non-agricultural professions it is possible to leave the profession for a certain period of time, in specific branches of national economy it is also possible to temporarily suspend production. In agriculture, though, it is not possible. That is why it is typical of the profession of a practicing farmer, in particular in animal production, that this job exhibits continuity throughout the year. This feature of agricultural production contributes to the fact that a number of people leave the profession. Prof. R. Manteuffel wrote: “... A real (I would say genuine) farmer shapes living plant and animal organisms. He can be to some extent compared to an artist creating works of art; he feels a joy, which is similar to that of the artist, who succeeds in producing something beautiful. Like an artist, he is also keen on obtained yields...” (Manteuffel, 1987).

Agricultural production is run in business entities called farms. They are the oldest organisational form of the human business activity. In the historic development, they experienced a long way of evolution. In early feudalism, they were organized as subsistence farms (feudal farms, peasant’s farms). Then, they were run as semi-subsistence farms, loosely linked to the developing market. Under the conditions of developed market economy, they have been gradually transforming into agricultural companies. The notion of a farm is

variously defined in reference literature. According to the Polish Civil Code, a farm is considered to be “agricultural land with forest land, buildings and parts of them if they constitute an organised business entity and with rights and obligations arising from running a farm” (the Civil Code). Polish economists stress that attempts should be made to distinguish agricultural companies from farms. According to Ziętara a farm is “a separate organisational production entity representing a set of three production factors: land, labour, capital (production resources), aimed at production of agricultural products. Talking of a farm, we do not go into details over how produced goods will be allocated, whether they will be used on a farm or allocated to satisfy the needs of a farmer and his family. A farm is a technical and organisational entity operating with a view to making agricultural products. An agricultural company, in the view of Ziętara, “is a business entity separated not only in terms of organisation, but also economically and legally, operating with a view to making agricultural products and providing agricultural services for sale. In companies, thus, production is commercial” (Ziętara, 1998). Farms (agricultural companies) in Poland and other European countries are mostly family businesses (Kowalczyk, 2011).

As it is defined by Tomczak: “a family farm is an independent production entity, in which the basic production factors belong to the owner (family), who performs managerial functions, work is done mainly by the owner and his family; ownership and management are passed down from generation to generation; a household is not separated from a production entity, and the farm generates income” (Tomczak 1998). In addition, A. Woś assigns to a family farm “a pursuit of a long-term goal, which is providing for a family and creating conditions for development of future generations, and he points out that a farmer on a family farm achieves a multi-component goal. He strives to maximise current income, but at the same time he has to offer employment to all family members” (Woś 1996). In Poland, it is proposed to legally establish family farms as a basis of agriculture. The Parliament (11<sup>th</sup> April 2003) enacted the act on national agricultural constitution in Poland (Journal of Laws 2003.64.592). In the above-mentioned act, a family farm is considered to be an entity conducting an agricultural activity based on own labour resources (having appropriate qualifications) and having a specified area (from 1 to 300 ha of agricultural land). The fragment about the size of the area of agricultural land, constituting elements of a family farm, raises some doubt. It turns out that under present conditions (given the technology available) it is possible to run a bigger farm (than the one specified in the act) based on own labour resources.

Considering the specific features of agricultural production and farms (agricultural companies) the process of efficient planning (feasible activities) must allow for economic, environmental and social conditions. While preparing a plan of development for a family farm (agricultural company) family goals should be treated as a starting point, i.e. the agricultural activity should be planned keeping in mind the household. By defining common family objectives, it is easier to determine a vision of development of a farm and formulate strategic plans. In conducting the planning process on farms, it is not possible to forget the key specific character of agricultural production, which is the reliance on living organisms and natural environment. At present (years 2004-2012) more and more emphasis is placed on running agricultural production so as not to harm natural environment. Different environmental restrictions in the form of legal regulations are imposed on an agricultural producer. While planning his activity a farmer must keep that in mind and be aware that production risk resulting from variability and unpredictability of climate conditions is high. In developing plans, economic parameters, including pricing, are also of great importance. It is often the case when a farmer struggles with proper definition of product prices and production means in the plan. Too optimistic approach (high product prices), which is likely to appear on the

market at the moment of preparing a plan, can make the plan unrealistic and difficult to implement (e.g.: maintenance of solvency).

However, it must be stressed that science, deriving information from economic practice, can offer better and better and more and more detailed proposals of production methods on farms, enabling achievement of planned targets. This situation arises due to the fact that most farms have been “producing” the same materials for ages, and given that, optimal methods for running this production are better understood.

### 3. METHODS OF PLANNING ON FAMILY FARMS

As it results from studies carried out at the Department of Economics and Organisation of Enterprises at Warsaw University of Life Sciences, plans prepared on farms can be differentiated based on two criteria: planning horizon and decision relevance (possibility of turning it back) on farms. These plans overlap because in most cases long-term plans are plans addressing more important (and frequently difficult to be turned back) decisions (Bereznicka, 2000). Bearing in mind the presented criteria of division it can be stated (in general nomenclature) that farmers work out strategic plans, being in most cases long-term plans, and operational plans, which are short-term. Developed strategic plans depict a vision of a farm in the next few years. This point is presented in a relatively general manner. In most cases it boils down to defining volumes of generated production.

Operational plans are more concrete. They are often short-term (monthly, quarterly, annual) plans. In operational plans, it is essential to foresee a financial standing of a farm. Solvency control is particularly important. It is very important to answer the question: Will current payments made into a bank account related to the activity conducted be sufficient to meet current financing requirements? This calculation is so important among others due to the fact that on farms (in particular the ones focused on plant production) payments and withdrawals of monies are spread over time very unevenly. On plant production farms farmers are forced (because of the production technology) to purchase production goods mostly at the beginning of the year, whereas payments for sale of products are made already after harvests (the second half of the year).

Plans on farms are prepared using different computer programs. “FINPACK” is an interesting tool, making it possible to approach the planning process on farms in a comprehensive manner. While using this tool it is necessary to make several logical steps. The first one includes an analysis of the economic and production situation (for the last year) on a farm (FINAN). In this part it is possible to determine the value of assets and sources of financing them, efficiency of the conducted agricultural activity for the whole farm or respective production branches, and to analyse the solvency of the farm. The next step of using the “FINPACK” tool entails development of long-range and strategic plans (FINLRB). By means of the analysed tool a farmer can define several directions for development of the farm (direction of production and desired size of the activity). Having entered parameters, a farmer gets a comparison of different development directions in terms of economic aspects. The third part of the “FINPACK” program has an algorithm for planning current financial flows (FINFLO). It makes it possible to answer one of the key questions: Will current payouts be high enough to meet financial requirements? Summing up it can be stated that using the “FINPACK” program a farmer can answer three important questions:

- 1) *Where am I?* – i.e. what my farm looks like (balance of assets, economic and production analysis);
- 2) *Where do I want to be?* – i.e. which direction of farm development should be pursued to achieve the intended goals (definition of different strategies of a farm depending on goals and changes of the surrounding circumstances);

- 3) *How can I reach it?* – i.e. will my own means be sufficient to implement planned changes, and if not, where to acquire money that is lacking (drawing up of a cash flow) (Bereźnicka, 1998).

#### 4. STANDARDS AND NORMS GENERATED BY “KTBL”

Preparation of plans often involves the issue of reliability of input parameters, which will impact final arrangements. Thus, a question arises: where to obtain information (parameters) from to develop a plan properly? Reference literature mentions that they should include:

- average quantities from relevant facilities corresponding to specific conditions,
- quantities verified in practice and based on personal experience of a person drawing up a plan,
- quantities selected in a proper manner from reference literature (Ziętara, 1994).

In case of relying on parameters from relevant facilities, a risk arises as to the fact that we will repeat mistakes from previous years in the plan. Therefore, it seems that we should rely on reference literature and in particular on standards and norms specified based on theoretical premises. In reference literature an *ex ante* cost statement, basing on desired anticipated quantities we would like to reach in optimal organisation of production, is referred to as standard cost statement or postulated cost statement (Karmańska, 2011). Many authors, i.a. Skwarzyn S., Fedak Z, Karmańska A. point out those costs in this statement can be determined based on standard costs resulting from base standards (permanent ones) or current standards called currently binding standards.

In many counties in the world, standards and norms are in use, which define standard (normative) costs of the agricultural activity depending on environment conditions and technological solutions. In Poland, the issue was particularly intensively dealt with in the 1970s; afterwards, the issue has not been studied so intensively. A great contribution to this field has been made by employees of Warsaw University of Life Sciences, and in particular by Prof. Ryszard Manteuffel (1971), Prof. Florian Maniecki (1976) and Józef Żuk, Ph.D. (1986). In other countries works devoted to this issue are still being continued. IT technologies offer new opportunities in this respect. Parameters for planning on farms etc. are generated by the institution called “*Das Kuratorium für Technik und Bauwesen in der Landwirtschaft*” (KTBL) in Germany. The mentioned institute generates standard parameters for most agricultural activities conducted in different systems (conventional, ecological ones) and presents standard costs of engaging different combinations of machines. In the electronic base developed by KTBL the following parameters are available (as at 4.06.2012):

- a) Parameters relating to outbuildings – investment expenditure and running costs of 162 models of greenhouses and plastic tunnels, 222 selected buildings for cattle, goats, sheep, horses, pigs, poultry and storehouses and warehouses;
- b) Parameters relating to plant production economics and organisation:
  - Detailed data for planning of plant production (production costs for selected activities depending on the anticipated yields level, quality of soils, field size, a set of machines used for cultivating procedures);
  - Diesel oil requirement depending on a performed cultivating procedure, set of machines, firmness of soil, field size, distance between the field and farm centre;
  - Expenditures and labour costs depending on a cultivating procedure, set of machines, firmness of soil, field size, distance between the field and farm centre;
  - Costs of use and maintenance (depreciation, repairs, fuel) of approx. 1400 machines;
  - Standard direct surpluses for respective regions and years.
- c) Parameters relating to animal production economics and organisation:

- Detailed data for planning of animal production (production costs for selected activities depending on the anticipated yields level, animal housing method etc.);
  - Parameters for converting animals into the so called “livestock units”;
  - Detailed parameters related to the standards of “Animal welfare”. The system describes and assesses 139 methods of housing cattle, swine, poultry and horses in terms of impact on environment and aspects of animal welfare.
  - Organic fertilizers in animal production – composition, doses depending on a grown plant etc.
- d) Parameters relating to garden economics and organisation – similar parameters as in case of plant production;
- e) Parameters relating to renewable energy and environment.

It should be pointed out that under the analysed system, it is possible to additionally generate economic and production parameters for agricultural activities performed in an ecological system. In this paper, I will limit myself to presenting parameters generated under the KTBL system for two agricultural activities – cultivation of winter rape and raising of dairy cattle. In the KTBL electronic system, in the plant production tab, a user can define a type of activity for which s/he would like to make an economic calculation. Then s/he selects a cultivation system (ecological or conventional one), marks a cultivation system, field area, crop yield level, quality of soils.

**Table 1. Statement of revenues and costs relating to cultivation of winter rape in a selected production technology in the KTBL (conventional production, direct drilling of seeds, average crop yield level, average quality of soils, a tractor with an engine power of 67kW used in farming, distance between the field and farm of 2 km)**

Specification	Volume	Price (EUR)	Value (EUR)
Value of potentially commercial production	3.35 t/ha	263.17 EUR/t	881.62 EUR/ha
<b>Total</b>			<b>881.62 EUR/ha</b>
Seed	0.33 SU/ha	229.80 EUR/SU	75.83 EUR/ha
Lime	1.00 t/ha	59.00 EUR/t	59.00 EUR/ha
Nitrogen and phosphorus fertilizers	440.00 kg/ha	0.23 EUR/kg	101.20 EUR/ha
Phosphorus and potassium fertilizers	360.00 kg/ha	0.20 EUR/kg	72.00 EUR/ha
Fungicides			37.00 EUR/ha
Herbicides			77.00 EUR/ha
Insecticides			16.00 EUR/ha
Water for sprinkler	1.20 m <sup>3</sup> /ha	2.50 EUR/m <sup>3</sup>	3.00 EUR/ha
Insurance	880.00 EUR/ha	23.34	20.54 EUR/ha
Interest on equity - 3 months	115.39 EUR/ha	0.04	4.62 EUR/ha
<b>Direct cost total</b>			<b>466.19 EUR/ha</b>
<b>Direct surplus</b>			<b>415.43 EUR/ha</b>
Variable costs of machines			85.89 EUR/ha
Variable costs of human labour	0.00 mh/ha	7.00 EUR/mh	0.00 EUR/ha
Services			73.23 EUR/ha
<b>Variable costs total</b>			<b>625.31 EUR/ha</b>
<b>Gross surplus</b>			<b>256.31 EUR/ha</b>
Fixed costs of machines			139.32 EUR/ha
Fixed costs of human labour	4.24 rbh/ha	15.00 EUR/rbh	63.60 EUR/ha
<b>Surplus above direct costs and costs of labour performance</b>			<b>53.39 EUR/ha</b>

Source: own study based on <http://daten.ktbl.de/dslkrtier/postHv.html>

To determine standard costs of labour performance it is necessary to provide information about the level of mechanisation of labour and used tractor (engine power). A distance

between the field and farm centre is important information, which is taken into account while generating analysed parameters. After specification of mentioned parameters, a user receives information about potential crop yield and its value and standard costs to be incurred in order to produce it. In case of mentioned winter rape (Table 1) potential crop yield is presented at the level of 3.35 t/ha. The value of potentially commercial production to be obtained from one hectare cultivated with rape amounts to EUR 881.62. Costs are broken down into significant groups. The first one covers direct costs (seeds, mineral fertilizing, plant protection, insurance of plantation and cost being a calculated cost – interest on engaged capital. A difference between the production value and mentioned direct costs is called a direct surplus. In the presented calculation it reaches the level of 15.43 EUR/ha. The next identified group entails variable costs. They include direct costs and variable costs of machines and human labour and external services (e.g.: concerning mechanisation) incurred due to cultivation. A difference between the production value and variable costs is called a gross surplus (in the analysed case it is 256.31 EUR/ha). While adjusting the determined gross surplus by fixed costs of machines and human labour, we receive information about “a surplus above direct costs and labour performance” (53.39 EUR/ha). It should be stressed that the presented costs and revenues are standard ones. According to findings of experts in most cases it is necessary to incur specifically such costs (as at present) in order to produce a specific effect (crop yield).

Animal production is a branch of production on farms which is more complex than plant production. It is in part like processing (processing fodders produced on the farm) and buildings are required in the production process (under our climate conditions). Production of milk, which is analysed in this paper, is one of the most complex production activities on a farm. What is more, it is capital-intensive and requires human labour. Modern technologies of milk production on farms make it possible to use various technical and organisational solutions on farms. Depending on the labour resources, capital resources and land resources and goals of farmer solutions are offered accounting for the limitations. In practice, it often boils down to making a choice of:

- 1) a type of a building in which animals are to be housed (tethered or stanchion barns, bedding or non-bedding barns etc.),
- 2) a method of milking (stall milking, milking parlour, rotary milking parlour, milking robots)
- 3) a method of feeding with fodders (a fodder wagon, feeding stations, a wheelbarrow).

Technical equipment used during labour is accompanied by questions about a rational level of animals' productivity together with intensity adjusted to it in a specific housing system. Questions arise as to the cows' milk yields and investment expenditure made with a view to producing them. In the KTBL methodology (solutions of 2012), specific technical and organisational solutions are offered for dairy cattle in most available technologies. It is possible to list 35 construction (technical) solutions of barns for dairy cows differentiated based on a number of parameters, i.a. the numbers of stalls for cows (from 58 to 492).

A KTBL system user, in the "construction costs" tab, has the possibility to make a detailed analysis of investment expenditure required to fund a specific construction type of the barn (together with equipment) and to determine running costs. After selecting a specific construction system, a situation sketch of a livestock building is displayed, followed by a description of technical parameters of the building. Next program tabs offer a calculation of detailed investments required to develop a specific livestock building. They are precisely broken down by respective stages of construction and equipping. Apart from investment expenditure, it is possible to determine in the program yearly running costs. These costs include the following. *Depreciation costs*. They are calculated based on a flat rate method, depending on the anticipated useful life. Elements of the building and its permanent equipment are divided into three groups. The first group includes fixed assets, whose



anticipated useful life is the longest (30 years). The second and third groups encompass fixed assets with shorter useful life, 15 and 10 years respectively. In the KTBL program elements of the building are automatically assigned to the three mentioned groups. *Costs of repairs*. They are calculated depending on the value of respective elements in the previously specified three groups. In case of the group of fixed assets expected to have the longest useful life it is assumed that costs of repairs will constitute 1% of their value. In case of the remaining two groups – 2 and 3% respectively. *Costs of insurance*. It is assumed that they will reach the level of 0.2% of the building value with fixtures. *Costs of an interest rate of the capital engaged*. It is proposed to establish them on 50% of investments. Annual interest rate is 6%.

**Table 2. A statement of milk production revenues and costs in a selected production technology in the KTBL system**

<b>Specification</b>	<b>Number/Stall</b>	<b>Price (EUR)</b>	<b>Value (EUR)</b>
Milk 4.1 % fat, 3.4 % protein	8 500.00 kg/year	0.28 EUR/kg	2 380.00
Calves - bullocks, weight 42 kg	0.48 unit/year	112.80 EUR/unit	54.14
Calves - heifers, weight 38 kg	0.48 unit/year	49.60 EUR/unit	23.81
Cull dairy cows	112.33 kg/year	2.11 EUR/kg	237.02
Production of slurry – cattle	19.00 m <sup>3</sup> /year	0.00 EUR/m <sup>3</sup>	0.00
<b>Total revenues</b>			<b>2694.97</b>
Heifer,	0.32 unit/year	1 480.00 EUR/unit	479.82
Hay silage , first crop	5.55 t/year	43.00 EUR/ton	238.65
Meadow hat, first crop	0.38 t/year	94.00 EUR/ton	35.72
Corn silage	6.93 t/year	46.00 EUR/ton	318.78
Concentrate for cows	2.90 t/year	170.00 EUR/ton	493.00
Mineral additives for cattle	94.16 kg/year	0.50 EUR/kg	47.08
Drinking water for animals	29.42 m <sup>3</sup> /year	1.80 EUR/m <sup>3</sup>	52.96
Technological water	3.70 m <sup>3</sup> /year	1.80 EUR/m <sup>3</sup>	6.66
Straw bales	0.55 t/year	90.00 EUR/ton	49.50
Electricity	50.00 kWh/year	0.17 EUR/kWh	8.50
Vet, doctor of insemination	1.00 unit/year	75.00 EUR/unit	75.00
Foot correction	1.00 unit/year	20.00 EUR/unit	20.00
Identification of animals	1.00 unit/year	5.04 EUR/unit	5.04
Disinfectants	1.00 yera	2.50 EUR/unit	2.50
Charges for control of breeding performance		7.82 EUR/unit	7.82
Insurance		3.50 EUR/unit	3.50
Utilisation of dead animals		5.50 EUR/unit	0.52
Costs of equity	1 162.48 EUR/year	0.04 EUR/EUR	46.50
<b>Total direct costs</b>			<b>1 891.55</b>
<b>Direct surplus</b>			<b>803.42</b>
Variable costs of machines		353.98 EUR/unit	353.98
Variable costs of human labour	0.00 mh	7.00 EUR/mh	0.00
Costs of services		0.00	0.00
<b>Total variable costs</b>			<b>2 245.53</b>
<b>Gross surplus</b>			<b>449.44</b>
Fixed costs of machines		173.96 EUR/unit	173.96
Fixed costs of human labour	34.45 mh	15.00 EUR/mh	452.31
<b>Surplus over direct costs and labour performance</b>			<b>-176.83</b>
Costs of buildings and their equipment.		573.16 EUR/unit	573.16
<b>Surplus over individual costs</b>	X	X	<b>-749.99</b>

Source: own study based on <http://daten.ktbl.de/dslkrtier/postHv.html>

Having defined investment expenditure related to a specific system of dairy cows' housing a user of the planning data set in the KTBL system can start to precisely determine costs and revenues arising in milk production. For this purpose, s/he refers to the tab of revenues and costs in animal production. S/he selects an animal species, production direction, animal housing system, and the level of their yields. In the analysed system, potential of animal yields are limited. They are limited to three general statements: small, average and high.

A KTBL system user has the possibility to follow standard revenues and costs of milk production in available variants of dairy cattle raising technologies. The limited length of this paper allows to present only one dairy cattle raising system. It is a raising system of German black and white dairy cattle with a significant share of the HF breed in the genotype. The animals are housed in a stanchion, box, non-bedded barn prepared for 108 units. The barn is equipped with a herringbone milking parlour (2 x 6 milking stalls). Animals remain in the barn throughout the whole year, having a possibility to use runs. In the presented system average yields of animals are defined, which corresponds to annual cows' milk yields at the level of 8500 kg of milk with an average 4.1% fat content and 3.4% protein content. It was defined that the average weight of dairy cows was at the level of 700 kg, intercalving period – 417 days and calculations were performed for cows with 2.7 lactations. The first stage of the calculation is to assess potential revenues. As the data presented in *Table 2* reveals, it includes the value of: milk, cull dairy cows and born calves. Quantitative parameters result from the adopted production technology.

A next step in the analysed calculation involves precise determination of all direct costs. They include all costs, which can be easily assigned to the calculated activity. In the KTBL methodology a production technology is handled in a very detailed manner and all costs (even the lowest ones) are identified (e.g. costs of dead animals utilisation, electricity, straw, corporate membership fee, costs of identification of animals). All prices result from market prices. Even costs of roughage (hay, hay silage, corn silage) are calculated based on market prices. A difference between revenues and direct costs is defined as - a part of costs after covering direct costs – a direct surplus (*Direktkostenfreie Leistung*). A next stage in the calculation entails determination of a gross surplus (*Deckungsbeitrag*).

In the methodology proposed by KTBL it is calculated as a difference between revenues and variable costs. A sum of direct costs and variable costs (which are not direct costs) of machines, human labour and services constitute total variable costs of a selected activity. At this stage of presentation it must be emphasized that in the methodology of the analysed statement an assumption is made that costs of machines operation can be divided into relatively fixed ones (depreciation, insurance, ongoing maintenance and interest of the engaged capital) and variable costs (use of fuel, lubricants, oils and repairs). At this level of calculation, a farmer obtains information about whether revenues cover costs dependent on changes in production volumes. It becomes clear whether it is worth continuing production (if it generates low profitability) or it is better to abandon it. In the analysed case, a direct surplus amounts to EUR 449.44 and a farmer obtains information that despite the negative income it is worth running the production. In the analysed calculation a next steps involves determination of fixed costs of machines, equipment and tools and fixed costs of human labour. The costs arise due to the adopted production technology and the used technical measures. In the last stage of the statement remaining fixed costs, which include: costs of buildings, legal costs and land transactions costs are subtracted. In the analysed example, when all costs are subtracted from total revenues, it turns out that the result is negative.

## 5. SUMMARY AND CONCLUSIONS

Planning is still an important element of management. As studies carried out at the Department of Economics and Organisation of Enterprises at Warsaw University of Life Sciences reveal, Polish farmers (regardless of their education, age, farm area and keeping accounts) believe that planning is necessary. They justify this fact in first place with better organisation of work and opportunities to earn higher income. In practice, in most cases, farmers work out strategic plans, being long-term plans, and operational plans, which are short-term. Developed strategic plans depict a vision of a farm in the next few years and investment activities. This point is presented relatively in a general manner. It boils down to determining volumes of the production run. Operational plans are more concrete. They are frequently short-term (monthly, quarterly, annual) plans. Their most important element is a cash flow statement. There is an increasing number of electronic tools available on the market which support planning on farms. One of them is the American “FINPACK” program.

Summing up the issue of planning on farms it can be concluded that:

- At times of relatively low profitability of agricultural production, farmers have to plan their activity. It is a relatively complex task due to the character of agricultural production. On family farms, it is advisable to start the planning process from defining goals of a family, i.e. goals of a household.
- Farmers have to know precisely the costs expensed on a specific activity and potential generated revenues. They must have the possibility to compare achieved results on their farms with potential (standard) results arising from a rational production technology. They have to think over reasons for differences and eliminate them.
- Farmers, under present conditions (globalisation), must have the possibility to compare and choose a production technology out of the available ones (at a certain time), which – from their own perspective – is the most attractive. To be able to make right decisions under a specific technology, they must have information about investment expenditure and production costs. There is a need for higher involvement of science (scientists) in the transfer of modern solutions into agricultural practice together with an economic assessment of their usability.
- Technical progress with regard to data collection and information sharing makes it possible to prepare a database, available on the Internet, useful for planning on farms. It is exemplified by German solutions provided via KTBL.
- A complex agricultural policy of the EU (specific activities and measures) must be based on reliable standard parameters to be efficient. To use EU fund monies in the most efficient manner there is a need for well prepared activity plans and a possibility of assessing them (standard parameters).
- European countries, including Poland, which do not have specific parameters for agricultural production (but decide to support it) should develop such a system as fast as possible. While making decisions about directions of supporting farms it is not possible to rely exclusively on information from FADN – which is historical and does not account for the issue of reasonableness of activities on farms (mistakes in management of farms).

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*Kornélia Gönczi*

## 2.7 AN ADEQUATE MANAGEMENT METHOD FOR IT TELECOMMUNICATION PROJECTS

**Summary:** Nowadays we would like to find a new consistent management method, which can be used as an effective tool by the project managers to manage and control the IT telecommunication projects. The managers have to plan and implement projects according to stakeholders' expectations and in the possible most efficient way both in terms of costs and time. At the first, I would like to introduce two project management methods, financed and organized by the EU and the US government. These organizations define the project management method. These methods are sustainable and transparent. The Project Cycling Management has to be applied to manage every EU project, while the Earned Value Project Management has to be applied to manage every US government supported project. We applied in the new method a special combination of both for IT Telecommunication projects.

**Keywords:** project management, earned value, telecommunication

### 1. INTRODUCTION

Europe is a pioneer in information and communication technologies (ICT). It worked out Tim Berners-Lee, CERN particle physics research institute employees, the principles of the World Wide Web in 1989. From 1993, CERN left everyone in the World Wide Web for free and free to use. In Hungary, this year launched [www.fsz.bme.hu](http://www.fsz.bme.hu) server. Between 1988 and 1991, the ETSI (European Telecommunication Standard Institute) has prepared the standard for mobile phones. The MPEG (Moving Picture Experts Group) standard and the ADSL (Asymmetric Digital Subscriber Line) technology also developed in Europe. Unfortunately, in recent years, Europe has fallen behind in the global market competition. Germany and France will lead major efforts, in the coming years; this gap does not grow further. If an area can be said that the rapidly changing environment must compete in the market challenges, and it is true many times in the area of telecommunications. The development projects in telecommunications, high momentum, and the sector's rapid development. So, the project management techniques should also evolve (Tapscott-Williams 2007).

Project management is of the same age as early civilizations. In the Roman Empire, the good architects applied the planning and organizing methods. Project management is the discipline of planning, organizing, and managing resources to bring about the successful completion of specific project goals and objectives. As a discipline, Project Management developed from different fields of applications – among others – including construction, engineering and defence. Two forefathers of project management are Henry Gantt, called the father of planning and control techniques, who is famous for his 'Gantt chart' as a project management tool; and Henri Fayola for his creation of the five management functions, which form the basis for the body of knowledge associated with project and program management. Frederick Winslow Taylor was the founder of scientific management theory (Csath, 2004). His work is the forerunner to modern project management tools including work breakdown structure (WBS) and resource allocation. In this paper, I show a new WBS for IT Telecommunication projects (Görög 2003). The 1950s marked the beginning of the modern Project Management era. Project management was formally recognized as a distinct discipline arising from the management discipline. Again, in the United States, prior to the 1950s, projects were managed on an ad hoc basis using mostly Gantt charts and informal techniques

and tools. At that time, two mathematical project-scheduling models were developed. The 'Critical Path Method' (CPM) developed in a joint venture by both DuPont Corporation and Remington Rand Corporation for managing plant maintenance projects. The other model is the 'Program Evaluation and Review Technique' or PERT, developed by Booz-Allen & Hamilton as part of the United States Navy's (in conjunction with the Lockheed Corporation) Polaris missile submarine program (Wikipedia Project management 2012). These mathematical techniques quickly spread into many private enterprises. One of my purposes with this essay is introducing two up-to-date project management methods and building up a new one from them. This method will be an adequate method for IT Telecommunication projects. The first is the Project Cycling Management (PCM) method. This method has to be applied to manage every EU project. In the case of PCM, the cycle starts with the identification of an idea and continues with developing that idea into a working plan that can be implemented and evaluated. Ideas are identified in the context of an agreed strategy. Financing must be added to the project plan. After the project implementation, we evaluate and audit the results. We utilize experiences in the next cycles. This is the cycle method. This method is the main character of PCM. Controlling, monitoring and evaluation are parts of PCM. In PCM, one of the main questions is defining the strategy. EU projects have the overall goal of making the European Union competitive in the world economy. The fulfilment of this basic strategic goal defines the success of the project. In 1992 the European Commission (EC) adopted 'Project Cycle Management' (PCM) as its primary set of project design and management tools (based on the Logical Framework Approach), and a first PCM manual was produced in 1993. The manual was subsequently updated in 2001, shortly after the publication of the EC's most recent Development Policy document (April 2000). A decision was made in early 2003 to update the PCM manual again (now referred to as the PCM 'Guidelines') as a result of which the experiences gained through implementing the 'new' development policy have been incorporated (European Commission 2003). Among others, there have been issues addressed, such as the ones that rose by the ongoing international debate on aid effectiveness, and feedback from participants attending PCM training. These are the aspects being relevant from the point of view of this study as well. These new Guidelines have been prepared to support ongoing improvements in the quality of EC development assistance. Quality is defined primarily by the relevance, feasibility and effectiveness of the programs and projects supported with EC funds, including how well they are managed. The other method is the 'Earned Value Management' (EVM). This method is applied in the USA. We have to use EVM in government-supported projects. In 1998 EVM criteria were accepted as an American National Standards Institute/Electronic Industry Association standard, called ANSI/EIA 748. Project Management Institute in Boston worked out EVM techniques. The method contains a lot of useful tools and indicators.

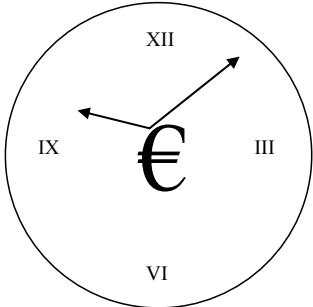
These indicators facilitate managing projects. These indicators help us to evaluate projects and predict the future of a project. The advantages of both (PCM and EVM) methods can be applied to all projects of any size or complexity. We can use them in every case independently of industry or size. In my essay, I propose to use EVM tools as indicators in PCM. In this way, we can control and evaluate the projects on schedule. In this essay, I propose to use the indicators of EVM with PCM in case of EU projects. It is important because the EU controller can determine how successful the project is.

## **2. EARNED VALUE PROJECT MANAGEMENT**

In the first part of the essay, I introduce the Earned Value Project Management. The base of the method is the earned value. The earned value is the value of the completed work. It is not about cost or money; it is the value of the work and this value is expressed in dollar (or

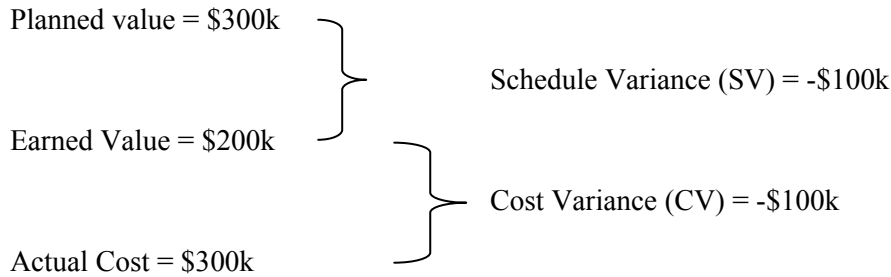
euro or forints). Through the entire life cycle of the project, we monitor the earned value and compare it with the planned value. I compare the actual cost with the earned value too. Minimum quarterly we calculate the indicators and based on them we can re-plan the project. The history of EVM started in 1930s when the industries in the USA developed fast and electronic and oil industries started great high-technology projects. The earned value concept originally came from the industrial engineers working in the early American factories. After the general depression, they understood that they had to measure the efficiency of projects, otherwise sources of investment were wasted. The newer history started in 1996 on the 27-th seminar of Project Management Institute. It was held in Boston. They declared that the Earned Value Management applied to every project is independent of size or industry. The same year they declared that in government supported projects the Budgeted Costs for Work Scheduled (BCWS) and the Budgeted Costs for Work Performed (BCWP) methods had to be applied. These methods are based on Earned Value Project management method. The EVM technique can be applied in case of multi-billion dollar huge high technology projects and only some hundred thousand-dollar software projects, too (Fleming and Koppelman, 2000). EVM is a methodology used to measure and communicate the real physical progress of a project taking into account the work completed, the time taken and the cost incurred to complete that work. Earned value helps evaluate and control project risks by measuring project progress in monetary terms. Some famous firms apply EVM techniques in their projects (for example GE, GM, Microsoft, etc. (Fleming and Koppelman, 2000). Henceforth, the fundamental conception of EVM is introduced. The fundamental conception is as follows: we measure and assess the earned value at important points of the timescale of the project, for example on a quarterly basis. At first, I compare the earned value with the actual costs; then we compare the planned value of the completed work at this point of time. I define the cost performance indicator CPI and the schedule performance indicator SPI.

*Figure 1: Time & budget*



Source: own construction based on Mulanny 2001

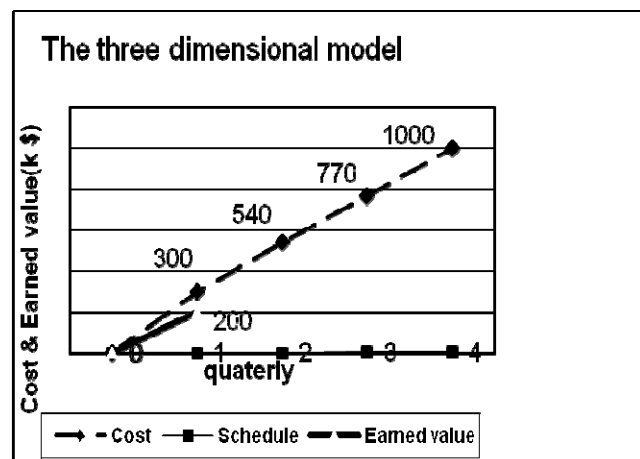
Let us see it on a simplified example: I have 1 million dollar/year for a project. In the first quarter, we will spend 300 thousand dollars according to forecast. After the first quarter, we make the project status review. We show in the figure a three-dimensional model. Earned value is the third dimension, the first is the time and the second is the cost. According to my example, at the end of the first quarter the value of the completed work amounts to 200 thousand dollars. This is the earned value. The actual costs amount to 300 thousand dollars. The value earned for the work performed compared with the actual cost incurred for the work performed (taken directly from the contractor’s accounting systems), provides an objective measure of cost efficiency. On the other hand, comparing earned value with the planned value measures the dollar value of work accomplished versus the dollar value of work planned. Any difference is called a schedule variance.



Performance Indices:

- Schedule Performance Index and
- Cost Performance Index give indications of the health of the project.
- Is the project on time, in budget or not?  
Schedule Performance Index is the ratio of Earned Value and Planned Value of completed works. A SPI < 1 is not good.
- $SPI = \text{Earned Value} / \text{Planned value}$  in our case is  $SPI = 0,67$ .
- Cost Performance Index is the ratio of Earned Value and the actual costs of completed works. A CPI < 1 is not good.
- $CPI = \text{Earned Value} / \text{Actual Cost}$  in our case is  $CPI = 0,67$ .
- Now, I introduce the Earned Value concept in nutshell.
- Earned Value Management (EVM) is a program management technique that integrates technical performance requirements, resource planning, with schedules, while taking risk into consideration.
- The Control Account Plan (CAP) is containing these important characteristics of the project. CAP is built by three main points:

Figure 2: Three-dimensional model



Source: own construction based on Mullany and Burgess 2002

1.) Technical performances

At first I determine the technical arrangement of the project.

It is containing the Work Breakdown (WBS) Structure and the Organizing Breakdown Structure (OBS) and determines the main responsibilities.

Then

2.) Budget

Now I have to determine the budget of project.



### 3.) *Schedule.*

The CPI and SPI are measured periodically. In this way we (can) define new indicators, too. These are CPI (p) and SPI (p).

When I plan a project I have to answer six questions: What?, Why?, When?, How?, Where?, Who?

But in case of EVM the Project Management Institute has defined the project planning process as a ten-step iterative effort, consisting of the followings:

- Define the project scope and identify specific tasks with the use of a WBS.
- Assign responsibility for performance of each of these specific tasks.
- Identify the interfaces between tasks.
- Identify the key project milestones.
- Prepare the master schedule.
- Prepare the top budget.
- Prepare detailed task schedules.
- Prepare detailed task budgets.
- Integrate the task schedules and budgets with the project master schedule and top budget.
- Set up the project files.

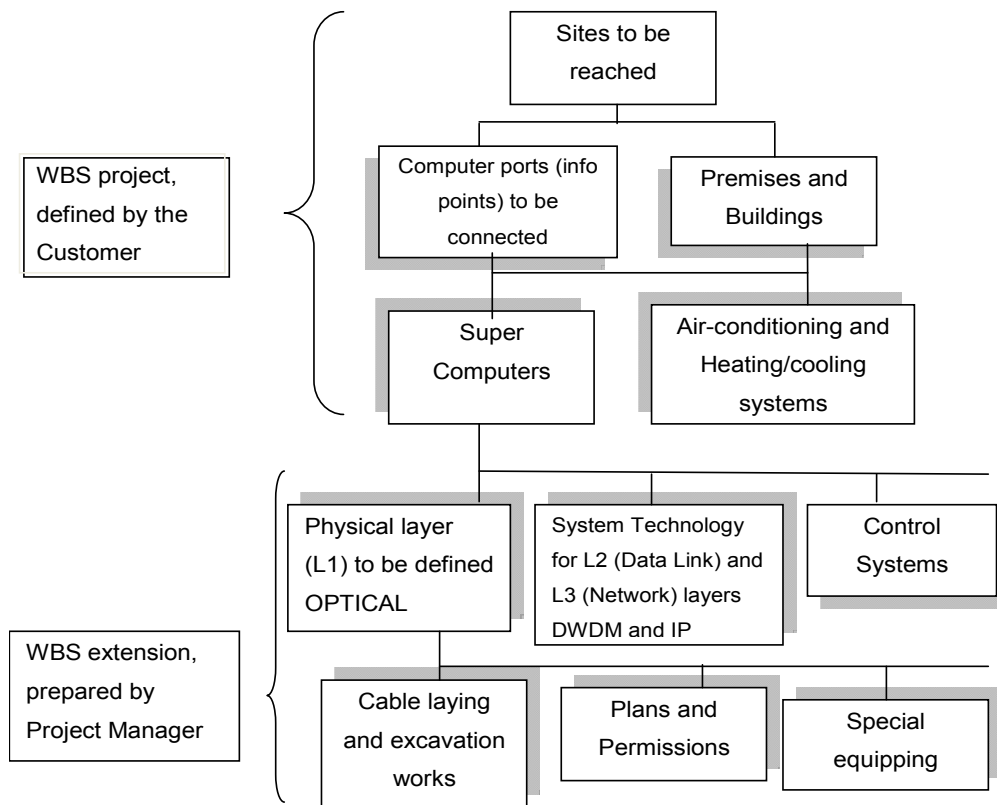
Earned Value requires a special scheduling system. There are the next steps required (Hobs, 2000):

- Schedule the authorized work in a manner that describes the sequence of work and identifies the significant task interdependencies required to meet the requirements of the program.
- Identify physical products, milestones, technical performance goals, or other indicators that will be used to measure progress.
- Identify at least monthly, the significant differences between both planned and actual schedule performance, and we need answers to these question:
- What was the cost estimate for the work scheduled?
- What work has been accomplished?
- What was the cost estimate of completed work?
- What have been our costs?
- What are the variances?
- Earned Value Management requires the synchronization of the planned value with the earned value in order to isolate any planned Schedule Variance (SV).

The EVM requires monitoring of project performances based on the Master Schedule Plan vertically and I need to establish the main responsibilities horizontally, too.

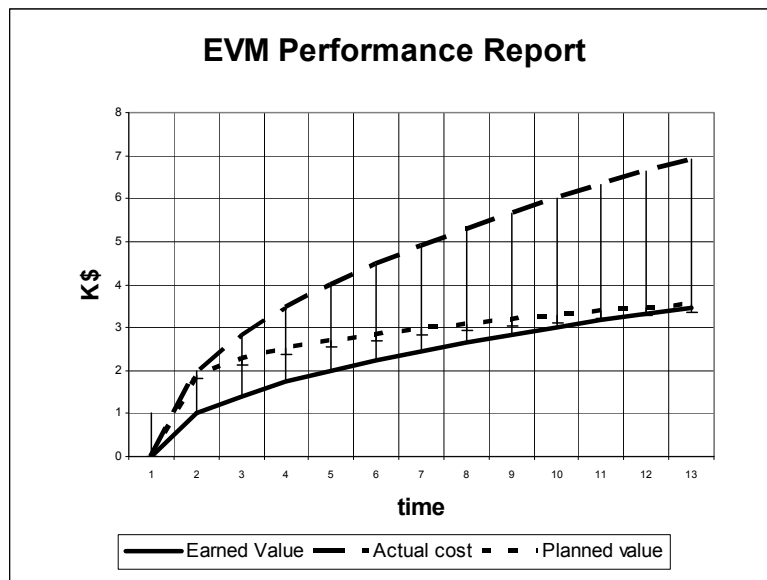
The Work Break down Structure is an integral part of beginning the concept of earned value. The WBS is defining as a hierarchical structure, which is necessary to fulfill the mission project. This definition in the United States government-funded projects must also be prepared in practice. The WBS is the first and second level defines the owner, while the lower levels, the project manager and the team. For projects where the cost increases there is a risk the entire WBS is the project manager and team will be defined, because the WBS is to be incorporated into the control and observation points.

**Figure 3: WBS for IT telecommunication project**



Source: own construction

**Figure 4: EVM Performance Report**



Source: own construction based on Flemming and Koppelman 2000

The negative earned value SV simply indicates to the project that it is failing behind its scheduled work. Finally, I can make the EVM Performance Report based on key data elements of CPI and SPI (Schulte, 2005). Earned Value Management helps Project managers to measure project performance. It is a systematic project management process used to find variances in projects based on the comparison of worked performed and work planned.

EVM is used in the cost and schedule control and can be very useful in project forecasting. The essence of earned value management is we are monitoring at the same time the cost, schedule and technical performances and the risk. You can see on the next Figure 5.

**Figure 5: The essence of EVM**



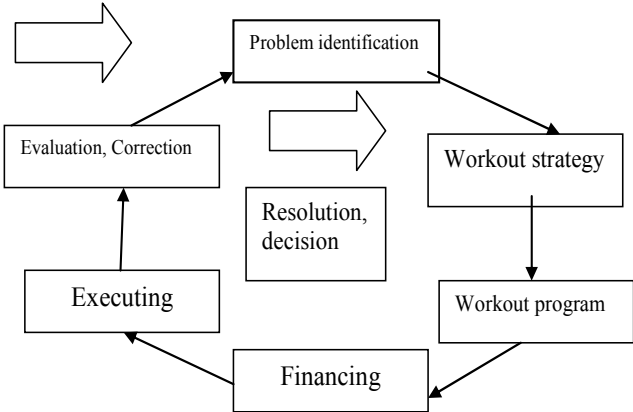
Source: own drawing based on Flemming and Koppelman 2000

**3. PROJECT CYCLE MANAGEMENT**

In the second part of my essay, I introduce the Project Cycle Management (henceforth PCM). The PCM is identified in the context of an agreed strategy. PCM is developed out of an analysis of the effectiveness of development aid undertaken by the OECD Development Assistance Committee during the late 1980's. PCM is based on the cycle theory. It contains the following processes:

Problem identification → Workout strategy, planning → Workout program → Executing, Monitoring → Evaluation, Correction.

**Figure 6: Project Cycle**



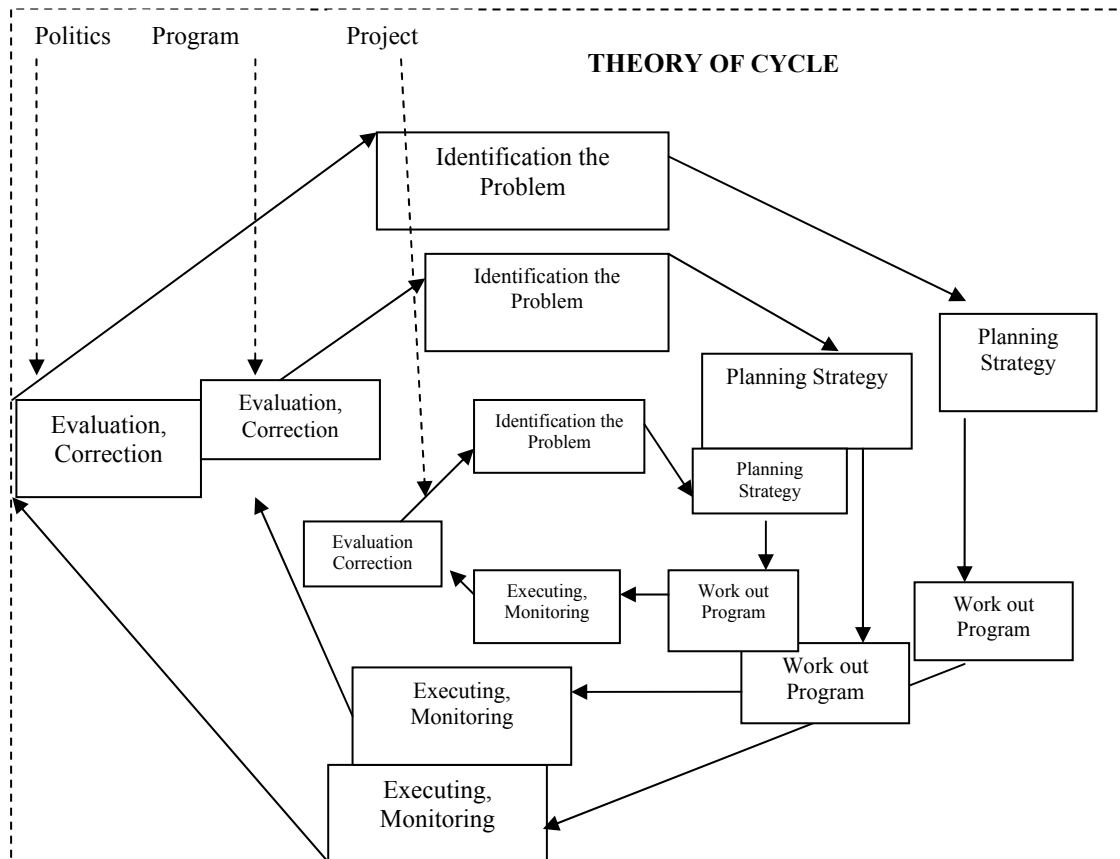
Source: own construction based on Bloom & Huskey 2001

The European Committee requires applying the 3P+1T concept to EU supported projects. Politics → Program → Project → Tender (Kjel and Karsson 2004). PCM was introduced by the European Commission in the early 1990's to improve the quality of project design and management and thereby to improve aid effectiveness.

The details of what occurs during each phase differ between institution, reflecting differences in procedures. However, within all instructions the cycle shares three common themes:

- The cycle defines the key decisions, information requirements and responsibilities at each phase.
- The phases in the cycle are progressive – each phase needs to be completed for the next to be tackled with success.
- The cycle draws on evaluation to build experience from existing projects into the design of future programs and projects.

**Figure 7: Theory of Cycle**



Source: own construction based on Bloom and Huskey 2001

Let us see my challenges: the communications lines are not high speed enough among Universities. We need 10 Gigabit/s or 40 Gigabit/s speed fibre data communications lines. I have to build it up.

**Table 1: SWOT analysis**

<b>Strengths:</b> Do not start from zero. We have old infrastructure too; use it.	<b>Weaknesses:</b> The business is not profitable for us.
<b>Opportunities:</b> Universities demand other services.	<b>Threats:</b> Other providers will be cheaper; The quality performance is not good enough.

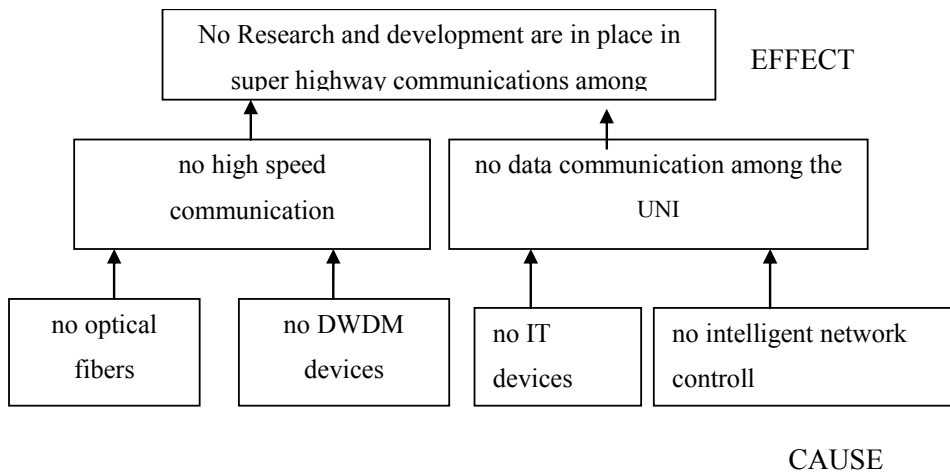
Source: own construction

In PCM the first is the strategic analysis (EU Commission March 2004). Three steps need to be made:

1.) *SWOT analysis*

This method is about 50 years old. I need to fill the strengths, weaknesses, opportunities and threats table Figure 8.

**Figure 8: Problem tree**



Source: own construction

2.) *Problem tree defining.*

The problem analysis involves the identification of major problems faced by beneficiaries and the development of a problem tree to establish causes and effects. The steps are: identification of the problems. Identification of the main problem and Cause - Effect identification

Drawing of the problem tree

Analyze cause – effects

Effect: No Research and development are in place in super highway communications among universities

Causes: There are no optical fibres; there are no IT devices; there is no high speed communication; there is no data communication.

3.) *Objectives tree.*

A problem tree presents negative aspects of an existing situation; an analysis of objectives presents the positive aspects of desired future situation. This involves the reformulation of problems into objectives; the “objective tree” conceptualizes the mirror image of the problem tree. The cause and effect relationships are “means and end” relationships.

Forecast– How to solve the problem?

Cause – effects change to means – ends

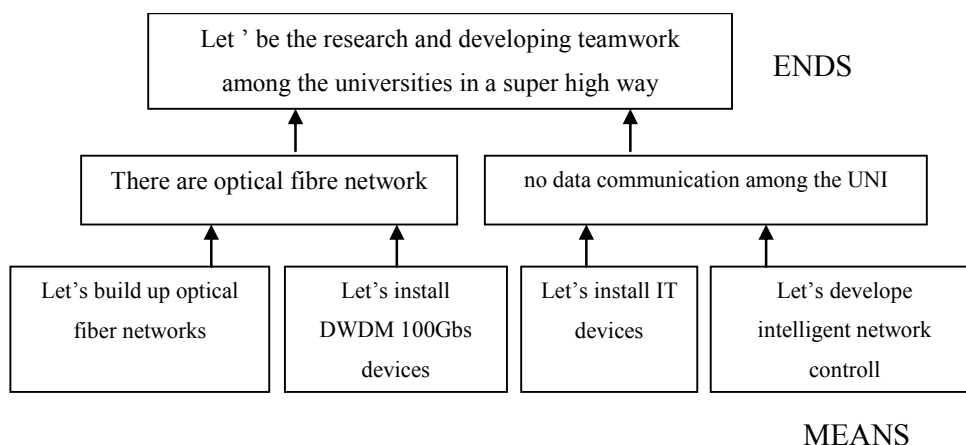
Tools – results

Ends – Let the research and developing teamwork among the universities in a super high way communications lines are.

Means: build up optical fibre networks; install IT devices; install DWDM 100Gbs devices. The Logical Framework Approach (LFA) was developed in the late 1960’s to assist the US Agency of International Development to improve its project planning and evaluation system. It was designed to address three basic concerns, namely that: Planning was too vague, without clearly defined objectives that could be used to monitor and evaluate the success (or failure) of a project. Management responsibilities were unclear, and, Evaluation was often an adversarial process, because there was no common agreement as to what the project was really trying to achieve. The LFA has since been adopted as a project planning and management tool by most multilateral and bilateral development agencies. The EC has

required the use of LFA as part of its Project Cycle Management system since 1993, and it provides a core set of tools with which to undertake assessments of project quality.

**Figure 9: Objectives tree**



Source: own construction and filled

Over time, different agencies have modified the formats, terminology and tools of the LFA; however the basic analytical principles have remained the same. Knowledge of the principles of LFA is therefore essential for all staff involved in the design and delivery of EC development assistance (Vörös, 2005).

In this way, we set the overall objective, the project purpose and the results and last but not least the activities. Now we determine beneficiaries and stakeholders. During the formulation phase, project ideas can then be fully developed in the knowledge that they are based on real beneficiary needs and are sufficiently ‘owned’ by the main stakeholders. In the planning phase the log frame and its output is called “Log Frame Matrix” (LFA). The log frame itself consists of a table, or matrix, which has four columns and (in its most basic form) four rows. The vertical logic identifies what the project intends to do, clarifies the causal relationships and specifies the important assumptions and uncertainties beyond the project manager’s control. The horizontal logic relates to the measurement of the effects of, and resources used by, the project through the specification of key indicators if measurement, and the means by which the measurement will be verified. (European Commission Guidelines 2004 pp.102)

**Table 2: Log Frame Matrix**

	<b>Intervention Logic</b>	<b>Verifiable Indicators</b>	<b>Sources of Verification</b>	<b>Assumption and Risks</b>
<b>Overall Objective</b>	Let R&D be in the UNI's	Number of R&D workers	how many students use the UNI network	
<b>Project Purpose</b>	If we renovate the old UNI would be high speed (100Gbs)connections	Number of conferences and workshops	Office of National Heritage, Register of local municipality	Start many international R&D projects
<b>Results</b>	New UNI building and lecture halls	A lot of PhD students	International science results	There are no enough lecturers'
<b>Activities</b>	Technological plan, building optical cables	Tools, Knowledge, Experiences	Costs, Schedule, CPI and SPI	Good corporation
				Precondition: entrepreneurs

Source: own construction

The Log Frame Matrix was developed in the USA in 1950's. The European Union implemented the Log Frame Matrix in the project cycle management method in 1996. It is very efficient tools for the project managers to manage the EU supported projects. The Log Frame Matrix contains the controllability and efficient-ability of the project. The verifiable indicators are very important. I propose to use the EVM indicators CPI, SPI too in PCM. These indicators would have an important role in the controlling, monitoring and evaluating of the project and the data collection, too. We would intervene in the project based on CPI and SPI if it is necessary. I could care of assumption of the project if we apply the EVM technique.

#### 4. THE NEW METHOD AND ITS APPLICATION

The challenge was having twenty universities networked with each other and the network center in the capital of Hungary. We had to build up a high-speed infrastructural optical network among the universities. We solved project management with Microsoft Project 2003. It has an „Earned Value” option too. Due to planning we had to obtain lots of official permits. For the most of the universities, the end dates were very strict. We had to build the system up for them in half a year. Now, I introduce how these tasks could be solved by the project (Gönczi, 2009).

First of all, we set up a project team. The team members were experts from technical, finance and sales fields. The team members were in a non-stop contact with each other via electronic communication lines. The first condition was the backbone communications solved by Electricity Power Company. We had to connect to this backbone network.

The project management activities included:

- Flow - charts
- network planning
- performance evaluation
- progress checkups
- resource management
- application of web information and a reporting system
- contract management: we had to enter into contract with the owner of backbone networks
- claim management
- cost planning: we have only predetermined costs
- schedule: we have to build the network half a year; I used MS Project 2003
- quality management: on completion of networks we have to control the predetermined quality
- documentation management: we have to solve inventory of all networks
- Risk management: a lot of events we have to make amends for digging above the planned cost; we have to compromise with natural park.
- configuration and change management
- Re-planning helps with to calculate earned values.

Let's look a sample example how to apply the CPI-SPI indicators in my project. The costs of excavation and laying one kilometer cable are four million forints. Unfortunately I crossed a private ended property and the landowner demanded one million forint compensation. Finally the cost was five million forint. The  $CPI = \text{Earned value} / \text{Actual value} = 4/5 = 0,8$ . It is less than 1, this is not good. Let's see the Schedule Performance Indicator. One kilometer excavation takes two week (10 working days), and the cost of working time / week is two million forint. Unfortunately there was rain. I didn't work two days long. So I worked only

eight days and its earned value only 3,2 million forint, but unfortunately I had to pay 4 million forints. So  $SPI = \text{Earned value} / \text{Actual value} = 3,2/4 = 0,8$ . Less than 1, this is not good for me. The next period was more fortunate for me.

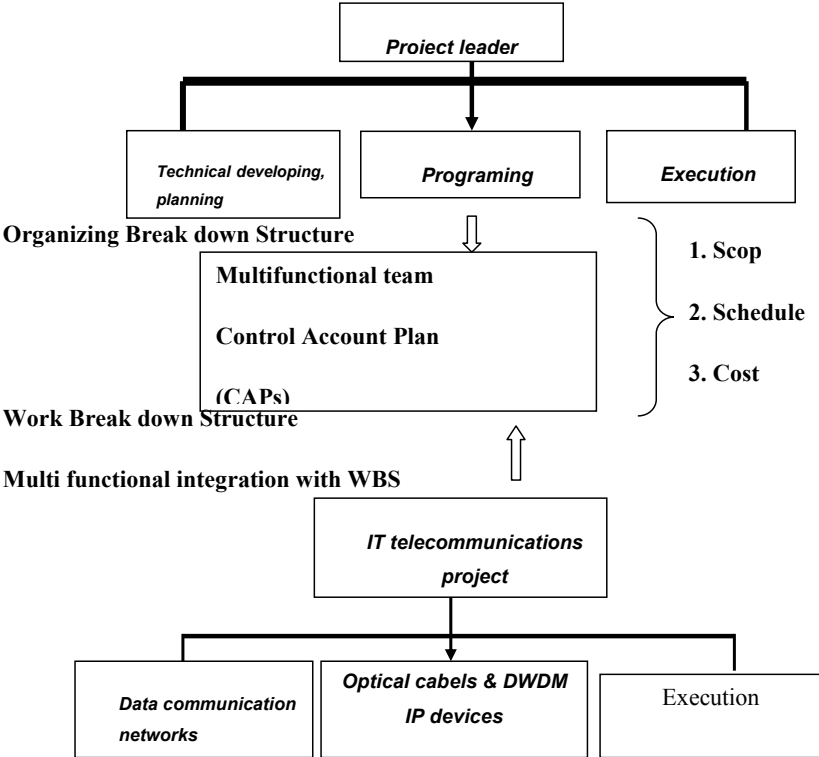
**Table 3.: CPI-SPI table**

Time	Earned Value Cost (Million HUF)	Cost Value (Million HUF)	CPI	Earned Value Schedule (Million HUF)	Schedule Value (Million HUF)	SPI
2011. 10. 05.	4	5	0,80	3,2	4	0,80
2011. 11. 05.	8	9,2	0,87	7,5	8	0,94

Source: own construction

I hadn't paid any extra costs and I could faster work than in the previous period. The cumulative  $CPI = 8/9,2 = 0,87$  and  $SPI = 7,5/ 8 = 0,94$  are improved. Documented experimental data (about 700 successful projects) in the quarterly monitoring for any time or in the cost of more than 15% slippage should not be allowed, because a larger difference irreparable. The CPI and SPI calculation by hand it can be kept constant. It very useful the MS Project software too, it has a built in earned value apply (Introducing Microsoft Office Project 2003). Let's look the figure of management organizing system (Fig. 10.).

**Figure 10: Management organizing system**



Source: own construction and filled based on Flemming &Koppelman 2000

At the first I have made the management organizing system. The main part of this system is the CAP control account plan. The Cap has to be exact, consistent and accurate. Then I organized the Multifunctional team. This team controlled my project from start to end. I managed the project at all levels of time, the performance; the result of monitoring. I monitored and evaluated it. I applied operational management of the technical work to address areas of integrated the commitment and the identified resources. I applied the multi-task management tool.



The endpoints were in five regions of the country: Western, Eastern, Southern, Northern and Middle Hungary. Each region had its own Project Manager. Every manager had to report to the Centre in all time. Every problem has been resolved on time and when it was required we re-planned the project in terms of its costs and schedule, too. We calculated the Cost Performance Indexes and the Schedule Performance Indexes and re-planned the projects accordingly. I have accomplished the project on time and collected many experiences. Let us pay more attention to the coordination of work force management; quality assurance issues and subscriber demands and better coordination of subcontractors (Appleyard Lee and James 2005).

## 5. CONCLUSION

Since the Project Cycle Management method has not lived up to expectations, which are added, so the EU's managers apply the Project Cycle Management is necessary to check how other projects. The projects has been missing from the review of the quantitative analysis that will help project participants to the project cost and time modify conditions if the situation warrants it. The Project Cycle Management is only project managers to expectation, rightly so; since public money is always tight settlement should be handled. However, the project's progress at the internal progresses can be monitored. The turning points, it should be possible, the project participants that are re-engineering project, all the time, taking into account both the cost ratios.

The new model of development has shown that not only earned value indicators were added to the Project Cycle Management method, but the project management of all previously used elements of force must be deleted and the project with all the participants, recipient, concerned with the customer contact should be and their needs taken into must be considered.

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## **CHAPTER 3**

# **Management, Training and Development of Human Resources**



*Norbert Wetzel*

### **3.1 THE CHANGING MISSION OF HUMAN RESOURCES MANAGEMENT**

**Summary:** Academics and HR practitioners are divided on the question whether the so called “best practice” approach or the “best fit” approach to designing and executing HRM policies, programs and practices will provide better results. The purpose of the paper is to reach a conclusion which will guide HRM leaders in their choice between the two approaches to human resources management. The paper discusses the issues involved and then presents a case for an approach to Human Resources Management (HRM) which is based on aligning HRM policies, programs and practices to the strategy of the organization served, its culture, its external and internal environment and its technology of production and on aligning the different elements of HRM programs and practices to each other, using the “best fit” principle. Based on evidence derived from the case histories of major companies in the recent past, the paper will demonstrate that only this approach to HRM will add value to the organization served and will provide it with a competitive edge which is something the traditional “best practices” approach to HRM is not capable of doing. The paper then explores the difficulties of simultaneously achieving alignment to the environment together with consistency of HRM policies, programs and practices and the circumstances under which this is possible. Global organizations face a special challenge in this respect and the paper explains why this is the case. Lastly, a case is presented for the need to manage with metrics and the role the so called HR Scorecard can play in measuring effectiveness of HRM activities.

**Keywords:** Best fit, alignment, consistency, globalization, metrics

#### **1. HRM AND ORGANIZATIONAL SUCCESS (OR FAILURE)**

Human resources are key to organizational success or failure. “There is a fast-growing and high-quality body of empirical research demonstrating that HRM policies have an impact on organizational performance” (Baron and Kreps, 1999, p. 4). “There is strong evidence that what are called High Performance HR Practices, such as employee recruitment and selection procedures, incentive compensation, performance management systems, and extensive employee involvement and training can improve many outcome measures, such as productivity, product quality, and innovative work practices” (Eichinger et al. 2004, p. 48).

Based on the available empirical research and evidence, we can be convinced that “organizational success with poor HRM policies is impossible, and that the effects of improved HR policies on organizational success are potentially enormous” (Baron and Kreps, 1999, p. 4).

The issue which needs to be addressed, however, concerns the specific HRM policies, programs and practices which will bring about success or failure. What needs to be explored is whether there exists a body of leading edge HRM policies and practices which will serve any organization well at all times and which will be effective no matter what the organization’s culture and business strategy may be or whether HRM policies and practices should be tailored to fit in the broader context of what the organization is trying to do (Baron and Kreps, 1999).

#### **2. THE TRADITIONAL APPROACH TO HUMAN RESOURCES MANAGEMENT**

Traditionally, HRM has been looked at as a provider of fairly mundane services: staffing the organization, deploying and redeploying employees, making sure those employees would

be properly paid, training and developing those employees, managing industrial relations, etc. The different nature of those services gave rise to the organization of Human Resources work along process lines. Typically, HRM work would be organized by process and HRM units would provide the following services to the organizations they served:

- Workforce Management (recruitment and selection, deployment and redeployment, retention of best talent, downsizing and restructuring)
- Compensation and Benefits
- Performance Evaluation and Performance Management
- Career Management, Training and Development
- Safety and Wellbeing
- Employee Relations and Industrial Relations
- HR Research and Controlling

This process approach to organizing HR work remains unchanged until today. What has changed, however, is the understanding of how those processes should be designed and executed. The traditional thinking was that if the major HR processes were of a leading edge nature or at least “state of the art”, then HRM would do its job and serve the organization well. Accordingly, one would attempt to design those processes based on what was considered “best of breed”, but without much regard for the organization’s culture, its business model and strategy and without much consideration for the internal and external environment in which the organization operated. The approach was to benchmark HRM policies and practices against the outside and to adopt what was considered “best practice” for the organization’s own use. HRM seminars, symposia and other events served and still serve exactly that purpose: making HRM professionals and managers familiar with outstanding best HRM practices and allowing participants to copy or imitate those best of breed programs and practices. When doing this, it was and still is believed in some circles, the organization would have leading edge HRM policies and practices which would best serve the interests of the organization.

### **3. WHY THE TRADITIONAL APPROACH TO HRM IS NO LONGER WORKING**

This “best practice” approach described under 2. above may have had its merits in former times when the internal and external environments were fairly stable, economies not in constant turmoil, technological progress slow and culture change rare and in any case slow. In today’s world, however, where change is continuous, its pace is accelerating and the need to adapt to changes in the environment is urgent, a stable set of HRM policies and practices will no longer serve the best interests of an organization. Nor will HRM policies and practices resulting from adopting “best of breed” practices of other companies contribute to the success of an organization.

IBM’s recent history is a good case in point. In the sixties, seventies and eighties of the last century, IBM was widely admired for its HRM policies and practices and was considered a leader in the field. Full employment without regard for the ups and downs of the company’s fortune in the market place, a lead policy of compensation, extremely generous benefits and, more generally, entitlement-based pay practices, were corner stones of those policies. Together with the belief in “respect for the individual”, those policies were intended to be immutable and remain in place forever. As it turned out, those policies served the company well in times when it had a near monopoly in the market, but proved to be disastrous in the early nineties when the company’s fortunes changed and the need for large-scale restructuring arose. Rather than do the necessary and lay off employees no longer needed, cut down on oversized pay and benefit packages and, more generally, change the entrenched culture of entitlement, executive management clung to the old policies and risked bankruptcy. The rest

is history: the board forced out old management, brought in a new CEO from the outside who then brought about the necessary changes in HRM (and other) policies. Observers of the IT industry are convinced that this is what saved IBM from extinction.

IBM's history reminds us of an important fact: HRM policies and practices must "fit" the firm's strategy and its culture and must be attuned to the internal and external environment. In a world that is undergoing rapid change, this need to continually adjust HRM policies and practices is an important ingredient of success.

## **4. WHEN HRM POLICIES AND PRACTICES WILL "FIT"**

### **4.1 ALIGNMENT**

Above all, HRM policies and practices must fit in the broad context of how and where and under what circumstances a firm operates and what it is trying to accomplish. Michael Porter as cited by Baron and Kreps (1999) has identified five factors, which are of importance in this context:

- The social, political, legal and political environment
- The workforce
- The organization's culture
- The organization's strategy
- The technology of production and organization of work

Another way of describing and defining the environment is to distinguish between the external environment, i.e. the economy, the political landscape, industry dynamics, labor markets and country cultures, and the organizational environment, i.e. technology, company culture and business strategy (Jackson et al., 2009). The external environment should be seen as a set of constraints and opportunities that can influence the way an organization manages its human resources, while the components of the internal environment provide an immediate context for managing human resources (Jackson et al., 2009).

Numerous examples of how context will affect HRM policies and practices come to mind. Here is just one which illustrates how certain pay and benefit practices will make extremely good business sense in a specific situation and little or no sense under different circumstances: the early Microsoft had a practice of combining broad-based stock option plans with fairly modest cash compensation. In the years (roughly from 1985 to 2000) when the company's stock price was "on a run", i.e. was going up year after year, this was an excellent way of rewarding employees, retaining the best talent, aligning employee and shareholder interests and saving cash compensation costs at the same time. Later, when the stock moved sideways for many years, those same compensation and benefit practices no longer made good business sense and, had they been continued, would not have achieved their intended purpose. Consequently, Microsoft had to change its compensation practices and had to increase cash compensation for its employees in a significant way.

The automobile industry in the United States and its changing fortunes over time provides another good example of the need to adapt HRM policies and practices to the external environment. The recent history of General Motors, Ford and Chrysler clearly demonstrates the need to be aligned to changes in the external environment. One remembers the time when the US automobile market was dominated by three companies, i.e. General Motors, Ford, and Chrysler. Basically, those firms had the market to themselves which gave them the power to set prices. In this easy competitive environment, management would time and again give in to the demands of their respective unions and accept benefit levels and restrictive workplace rules and practices affordable at the time but which turned out to be a millstone around the

companies' necks later when the competitive landscape had changed. A few specific examples will illustrate this point:

- It is estimated that in 2009, at the height of the crisis that engulfed the US automobile industry, each car produced by General Motors in the United States was burdened with additional costs of US \$ 1,000 resulting from expensive health and retirement benefits for the General Motors workforce. Ford and Chrysler were faced with a similar situation.
- Ford's contract with the union in the 2000s allowed workers nine (!) unexcused absences from work in 18 months before they could be dismissed.
- Union contracts for all the major manufacturers provided for widespread "featherbedding", i.e. work rules designed to employ workers in jobs not really needed.

Those practices gave foreign manufacturers a significant cost advantage and allowed them to compete aggressively when markets opened up. Foreign manufacturers enjoyed those significant cost advantages not only when producing cars at home but also when they set up manufacturing plants in the US. Those foreign "transplants" were either not unionized and where they were, management would stand up to the unions and resist excessive benefit levels and restrictive work place rules and practices.

As a result of all this, foreign automobile manufacturers, above all those from Japan, were able to successfully establish a market presence in the United States. General Motors, e.g.,

saw its market share of light-vehicle sales plunge from roughly 45 % in the 1980s to less than 20 % in the 2000s. This long slide in market share for General Motors went hand in hand with a rise in Toyota's share from next to nothing in the 1980s to close to 15 % in the 2000s. When this happened, established pay and benefit levels of the traditional US automobile manufacturers became unaffordable and local manufacturers had to make major efforts to reign in costs by renegotiating contracts with their unions, cutting back on excessive benefits, reducing hourly pay, etc. Long-established pay and benefit practices went over board and work rules and regulations underwent significant change. A classic demonstrating is the need to either align to the external environment or risk survival!

Here is one more example closer to the home of the author: the recent history of Austrian Airlines, Austria's national carrier. Austrian Airlines' workforce had extracted attractive employment terms and conditions from the company's management over the years, terms and conditions which were affordable as long as the airline was competing against other national carriers who had similar pay and benefit levels. But with the emergence of low cost carriers, the firm's business model built on providing high-class service at high prices turned out to be no longer viable. The result were years of significant losses, the fire sale of the company to Lufthansa and, at long last, new management which decided to take on the union and bring about major changes to pay and benefit levels in order to secure survival in an increasingly competitive environment.

## 4.2 CONSISTENCY

Not only must HR policies and practices be aligned to the organization's strategy, its culture, its environment, its workforce and its technology, HR policies and practices must also be internally complementary or at least consistent. Ideally, they must support each other, lend strength and meaning to each other and will reinforce themselves that way. As a minimum, however, HR policies and practices must not clash with each other.

Following Baron and Kreps, there are three aspects of consistency:

- Most importantly, the different policies and practices making up an organization's HRM system must be internally consistent, meaning they must be aligned to each



other. They should emphasize (or deemphasize) the same themes and messages and must be based on the same basic view of man. If that view is that what makes employees tick is money and status, then this view must be reflected in the company's recruitment policies, its compensation practices, in the way performance is recognized and rewarded, in the way employees are developed and promoted, etc. And if the view is that what really matters is the psychological bond which holds employees and the organization together, then the entire set of HR policies and practices must emphasize this "we are one family" theme. With Baron and Kreps, we refer to this kind of consistency as "single-employee" consistency, meaning that "the different pieces of HR policy that bear on a single employee should be consistent with one another" (Baron and Kreps, 1999, p. 39).

- Consistency also means that different employees or employee groups should be treated the same way in similar situations. This is referred to as "among-employee" consistency (Baron and Kreps, 1999). As a minimum, employees working side by side, doing similar work, should enjoy the same employment terms and conditions.
- Lastly, there is a case to be made for a certain degree of consistency over time, i.e. temporal consistency or continuity.

A few more thoughts on the three different aspects of consistency are in order and are presented below.

#### **4.2.1. Single-employee consistency**

This is the most important aspect of consistency. Unless the various pieces of the HRM system really "fit", HRM will not contribute to the success of the organization. A couple of examples will illustrate why this is so:

- An elaborate performance evaluation system will make little or no sense if it is not complemented by compensation practices which emphasize performance, i.e. make sure that there is significant pay differentiation based on individual or team performance. Likewise, staffing decisions, i.e. decisions on who is allowed to stay, who will be promoted, who will be terminated, must be performance based. In addition, training and development must have a strong link to performance. If an organization does not promote people on merit, if it does not differentiate pay based on merit, if it does not terminate those who do not perform, why evaluate performance in the first place? On the other hand, if all the proper links between the pieces of the system are in place, an organization can credibly live a performance based culture and will derive significant benefits from that. In the absence of those links, any reference to performance as an important theme will remain mere lip service.
- Organizations should also be consistent when deciding whether they will focus on individual or team performance. When it is individual performance, then this principle must not only be observed in assessing performance but also when making pay decisions and when deciding on promotions. They must also decide whether the emphasis is on egalitarianism or meritocracy, on centralization or decentralization, trust or distrust in relations between the firm and its employees, focus on outcomes (getting the job done) or process (following rules), etc. (Baron and Kreps, 1999). Only to the extent that an organization sends "unambiguous and consistent messages to its employees about these topics, employees will have a clearer and more powerful sense of what they can expect and what is expected of them, thereby aiding in the attraction, motivation, and retention of people best suited to the enterprise" (Baron and Kreps, 1999, p. 43).

#### **4.2.2. Among-employee consistency**

This kind of consistency is highly desirable because it touches upon basic notions of fairness and equity. In its most rudimentary form, among-employee consistency means that employees working side by side should enjoy the same terms and conditions, meaning they should have the same or similar pay, be covered by the same benefits, enjoy equal job security and be subject to the same rules and regulations governing all aspects of employment. This principle of among-employee consistency is as important in principle as it is difficult to achieve in practice. The reasons for this difficulty are many-fold:

- There has been a paradigm shift in how and on what legal basis people are employed. Full-time regular employment is no longer the norm but becoming the exception in many organizations. As a rule, full-time regulars are complemented by part-time employees, temporary employees, contract personnel, agency and vendor personnel, consultants and employees in subsidiaries, joint ventures and affiliates of some sort. When and where this is the case, employment terms and conditions are likely to differ. After all, different employment models are often used precisely because they allow the use of different terms and conditions and will result in cost savings for the enterprise. Where this is the case, charges of unequal treatment and discrimination are likely to arise and teaming between employees belonging to different groups will take a toll.
- Among-employee consistency is also affected by the way global companies manage their business. Increasingly, they will manage their business as a portfolio of businesses and will divest selected business areas when needed just as they will invest in new business areas on an ongoing basis, resulting in increasing resource dynamics with significant population churn. Among other things, this means that when investments are made in new business areas, employees with different terms and conditions must be absorbed and integrated. This takes time and different terms and conditions are likely to persist for extended periods of time. Within the EU, the Acquired Rights Directive (Directive 2001/23/EC) even aims to ensure that in case of the “transfer of an undertaking” the terms and conditions of employment are maintained for the employees affected. This will virtually guarantee that among-employee consistency does not exist, at least for a period of time.
- Lastly, among-employee consistency is difficult to achieve for global companies who need to align their HRM policies, programs and practices to the different local environments of the many places where they operate. This issue will be addressed more fully under Chapter 5 below.

Almost needless to say, in the absence of among-employee consistency, creating and maintaining a motivated workforce committed to the organization’s goals and values represents a significant challenge.

#### **4.2.3. Continuity**

Continuity in the sense of consistency over time is another important aspect of consistency. Employees should be subject to a stable set of HRM policies and practices because sudden and frequent changes create ambiguity and will leave employees confused and unable to understand what is expected of them. But it is obvious that consistency over time can conflict with the need to change HRM policies and practices in response to changes in the organization’s strategy, its culture, its environment, or its technology of production. The challenge any organization will have is to strike the right balance between the need for continuity and the need to make the necessary changes.

### **4.3 ALIGNMENT AND CONSISTENCY – CAN WE HAVE BOTH?**

As has been pointed out, HRM policies, programs and practices should ideally be aligned to the external and internal environment and should also be consistent with each other (“single-employee consistency”), among employees (“among-employee consistency”) and over time (“continuity”). In an organization faced with a uniform external environment, as would be the case if operations were restricted to a single country, achieving this kind of alignment together with consistency in all of its three dimensions is not necessarily guaranteed but will often be possible if the necessary effort is made. Alignment to the environment is always important and so is single-employee consistency. Difficulties may arise where alignment to the external environment requires the different treatment of employee groups, as pointed out under 4.2.2 above, or where alignment to the external and internal environment requires making changes to HRM policies, programs and practices and thus abandoning continuity. Clearly, a trade-off is required between the need for being aligned to the environment and the desire to have continuity. Overall, however, achieving alignment together with consistency in all its aspects is easier when an organization operates in a single environment rather than being faced with a multitude of different environments. When an organization does business in many countries and cultures, however, as is the case with global companies, there are manifold external environments to deal with and achieving alignment together with consistency presents a much bigger challenge. The impact of globalization will now be explored below.

## **5. HRM AND GLOBALIZATION**

Alignment of HRM policies, programs and practices and their consistency as described above are the corner stones of effective Human Resources management. What needs to be explored is how alignment and consistency are impacted by globalization.

Globalization has many aspects. For the purpose of this paper, a global company is defined as a company, which serves customers and clients in different parts of the world, and has presence in different parts of the world (presence being defined as owning assets and employing people), sources products, parts and components from around the globe and, lastly, also sources talent for professional and managerial positions from around the globe.

Managing human resources in this kind of company poses some very special challenges which will now be explored.

It will be remembered from 4.1 above that alignment of HRM policies, programs and practices is about making sure they are in tune with

- The social, political, legal and political environment
- The workforce
- The organization’s culture
- The organization’s strategy
- The technology of production and organization of work

While a global company will attempt to establish the same organizational strategy and the same technology of production and organization of work wherever it has a presence, it is obvious that the external environment, i.e. the social, legal and political environment, will show significant differences around the globe. Also, the local manifestation of the organization’s culture will always be impacted by the local culture. Typically, one can observe the emergence of a hybrid organizational culture, made up of elements of the global company’s corporate culture and the local culture.

Given that situation, a global company will have a choice between being fully aligned to the various external environments where it operates, in which case consistency of HR

policies, programs and practices will be impacted, or to have consistency of HR policies, programs and practices across all locations where it operates and, as a result, sacrifice or at least compromise alignment to the external environment.

Another way to describe the dilemma, which global companies face, is to introduce the concept of “fit” in global HRM. “*Internal fit* is concerned with making sure that HRM policies facilitate the work values and motivations of employees. Policies must be structured in ways that allow headquarters and foreign subsidiaries to interact without sacrificing efficiency. *External fit*, on the other hand, refers to the degree to which HRM matches the context in which the organization is operating. ... To be effective, the organization must understand the cultural and socioeconomic environments of the foreign subsidiary.” (Ivancevich, 2007, p.101). The disturbing fact is that it is difficult if not impossible to achieve a high degree of external fit together with a high degree of internal fit. What global companies face is a situation where they must trade off external fit against internal fit. Or, to quote Baron and Kreps, “the trade-off, of course, is between consistency in HR strategy and practices across units versus fitting those strategies and practices to specific situations” (Baron and Kreps, p. 519).

How a global company will make that choice will depend on many considerations. One thing is clear: there is no standard solution; the choice will have to be made in each individual case, after having answered the following question: “What are the costs of potential inconsistencies in policy and practice across parts of the organization; and what are the benefits of customizing HR activities to the particular context?” (Baron and Kreps, p. 520). When trying to answer that question, it will be helpful to identify those factors which favor consistency of HR policies, programs and practices, and also those factors which speak in favor of customizing HR practice to the local environment.

## **5.1 CONSIDERATIONS IN SUPPORT OF CONSISTENCY**

We will expect to see a high degree of consistency in the following situations:

- When the global company has a global line of products and/or services and when the company’s globalization strategy is “predicated more on developing global brand equity and facilitating the transfer of knowledge, products, and technologies from one business unit or locale throughout the organization, particularly when the client or customer being served is itself a global enterprise (Baron and Kreps, 1999, p.520)
- When the company’s R&D facilities and its manufacturing operations are closely interrelated and the company’s workforce must cooperate closely in product development and manufacturing.
- When the global company makes a green-field investment, i.e. starts operations in a foreign country from scratch.
- When the company has a very strong and dominating culture and the company attracts a profile of employees matching that culture.
- When the global company is dependent on foreign assignees for the management of its foreign operations and must assign personnel from headquarters or other units to staff managerial and professional positions in the foreign country.
- When HRM programs and practices have a high degree of complexity and are expensive to develop.

In a nutshell, the global company with a strong, dominating culture which serves customers or clients in a global market, sources talent from around the globe to staff its operations, has a high degree of interrelation between units, is more likely to insist on a high degree of consistency of its HRM policies, programs and practices.

## **5.2 CONSIDERATIONS IN SUPPORT OF ALIGNMENT TO THE LOCAL CONTEXT**

Conversely, we will expect to see strong efforts to align to the local context and to accept compromising consistency when the following circumstances exist:

- The company develops local products and services to serve local markets.
- The local units have a high degree of independence.
- The local units are not dependent on the parent for staffing managerial or professional positions and there is hence little or no exchange of staff between units.
- The global company has acquired local companies with an entrenched and successful culture.
- The global company's organizational culture values autonomy rather than control.
- Local country culture is very strong and the company cannot attract employees who will fully buy into the parent company's values and beliefs.
- The industrial relations environment, i.e. the relationship with unions and other employee representative bodies, such as works councils, and the corresponding legislation is such that significant modifications are needed to the parent company's mode of operations.

Again in a nutshell, the global company which is primarily serving local customers and clients in their local markets, is operating in an environment requiring substantial modifications to the parent company's mode of operations and must hence grant lots of autonomy to the local subsidiaries, will most likely compromise full consistency in the interest of alignment to the local context.

## **5.3 COMPENSATION PRACTICE OPTIONS**

A good example of the options available to a global company when designing pay systems is presented by Bloom et al. who distinguish between three general compensation strategies available to companies with worldwide operations:

- The "localizer" will design and execute pay systems consistent with local conditions. Typically, the company's business strategy is to seek competitive advantage by providing products and services tailored to local customers.
- The "exporter" is the virtual opposite of the localizer. "Exporters design a total pay system at headquarters and export it worldwide for implementation at all locations. Exporting a basic system (with some adjustments for national laws and regulations) makes it easier to move managers and professionals among locations without having to change how they are paid. It also communicates consistent worldwide objectives. Common software used to support compensation decisions and deployed around the world makes uniform policies and practices feasible" (Milkovich and Newman, 2005, p.522).
- Similar to exporters, the "globalizer" will "seek a common system that can be used as part of the glue to support consistency across all global locations. But headquarters and the operating units are heavily networked to share ideas and knowledge" (Milkovich and Newman, 2005, p.522, 523). This policy option tries to combine the advantages of consistency across all locations with the advantages of at least partial alignment to the local context, the latter being achieved by using networking with the operating units and relying on their input when designing the common pay system.

Needless to say, no one of those options can achieve full consistency and perfect alignment to the local context. There is always the need for a trade-off between the two.

## 6. THE NEED FOR METRICS AND AN HR SCORECARD

In addition to the improved understanding, today we have need to have HRM policies and practices aligned to the organization's strategy and environment and to have consistency of those policies and practices, there is now a much better understanding of the need to have a meaningful set of metrics which must guide the work of HRM and measure HRM effectiveness.

In the not so recent past, HRM programs and practices were not believed to be subject to quantitative analysis. Rather, the belief was that management should engage in deep thinking about the kind of HRM programs and practices needed and should execute those believed to serve the interest of the organization best.

Today, it is increasingly understood that metrics can play a very useful role and can be "used to evaluate the effectiveness of the organization's many HR policies and practices" (Werner et al., p. XVII). Metrics will track the progress HRM is making in delivering value to the organization and will answer the questions whether specific HRM programs will do what they were designed to do. A few simple examples will illustrate this point:

- It is often claimed that the grant of stock options will help retain key employees. It is also claimed that stock options will align the interests of managers who receive option grants with the interests of shareholders. Based on this belief, many companies have implemented stock option programs. Simple metrics could be used to substantiate (or refute) those claims. One could simply compare the attrition rate (turnover rate) of employees with and without stock options and one will have a much better understanding of what stock options will do to retain a company's best talent. Likewise, comparing the financial performance and stock market performance of companies with and without stock option programs will allow us to make a judgment about the effectiveness of the claimed alignment of interests.
- Simple metrics could also be used to establish how effective different recruitment and selection methods are. Comparing the on-the-job success of employees recruited from different sources or the job success of employees selected by different recruiters will provide the answer.
- Metrics are also useful to track the efficiency of an organization's HRM programs and practices, using simple productivity measures. One could track the development of those measures over time and/or could use them to benchmark the organization's productivity against the outside.

More recently, the work on metrics has evolved further and resulted in the use of a so-called Balanced Scorecard, a combination of hard and soft measures. This has been extended into the HR Scorecard to measure the accomplishment of all of the above (Eichinger et al., 2004).

With the increasing popularity of benchmarking, companies now increasingly will compare themselves to other firms in terms of their turnover rates, HR headcount and costs per capita, training costs per employee, or employee satisfaction (sometimes by hiring an outside firm to do the survey and provide comparison statistics on comparable firms)" (Baron and Kreps, 1999, p. 526). Such efforts are useful, but a few caveats are in order:

- Comparisons can be useful, but in order to be meaningful, they should be limited to the firm's own industry.
- Even within the same industry, comparisons are only meaningful, if the firms compared pursue similar strategies and use comparable technologies.
- Most meaningful are HR-related metrics which track the firm's performance over time.

- HR-related metrics “tend to be less precise than performance standards in other domains such as those that concern costs, market share, or operational efficiency.” (Baron and Kreps, 1999, p.526). Holding managers accountable for such metrics is difficult under those circumstances, but if managers are not held accountable, they will disregard those metrics.

According to Baron and Kreps, the solution is to develop so called “HR drivers” of the business: “What are the specific facets of human resource management that translate into tangible business outcomes that the organization cares most about by virtue of its strategy? Then, having identified those HR drivers, organizations should develop metrics that permit line managers and the HR function to be assessed in terms of the quality and cost of their efforts to develop and maintain the key HR drivers” (Baron and Kreps, 1999, p.526, 527).

## **7. CONCLUSIONS**

There are a number of simple truths which emerge from the observations made:

- The “best fit” approach to HRM is far superior to the “best practice” approach. Best fit means aligning HR policies, programs and practices to the environment and making sure they are consistent with each other.
- Alignment to the environment is key factor and unless it is accomplished, a firm’s survival is at stake. As the case histories mentioned show, alignment to the external environment is neglected at an organization’s peril.
- Since change is pervasive in our society and its pace is quickening, timing is all important. Making the necessary changes to a company’s HRM policies, programs and practices in time, and not only when survival has already become an issue, is the key challenge to a company’s policy makers.
- Unfortunately, the need to align HRM policies and practices to the external and internal environment often conflicts with continuity, which is also a desired characteristic of HRM policies, programs and practices. Continuity, i.e. consistency over time is highly desirable but needs to be compromised in the interest of alignment to the environment.
- In the age of globalization, among-employee consistency represents another critical challenge. Treating all employees around the globe, the same is desirable but is often in conflict with the need to align policies, programs and practices to the local environment. One cannot always have both and trade-offs will be required.
- Metrics are useful to track the efficiency of an organization’s HRM programs and practices. Even more useful is an HR Scorecard, which will measure the accomplishment of HRM’s effectiveness against hard and soft benchmarks.

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*Aleksandra Czarnecka, Anna Słocińska*

### **3.2 STAFF TRAINING AND IMPROVEMENT AS A FACTOR IN BUILDING HUMAN CAPITAL IN ORGANIZATIONS**

**Summary:** According to the modern approach, human resource management in organizations should be oriented towards conversion of human resources into capital. Employees, considered as a capital in the organization, may determine its business value. Without employees' contribution, other organizational resources, such as financial resources, technology, machinery and equipment would only be useless values in the enterprise.

The aim of this paper is to demonstrate the importance of staff training and improvement to organizational human resource management. In order to produce the desired effect, the above process needs to be implemented regularly. Although vocational education and training often involve considerable costs, they should be viewed as an essential investment, which results in maintaining the value of human resources at the level desired by the organization.

**Keywords:** staff training, improvement, human capital, human resource management

#### **1. HUMAN RESOURCE MANAGEMENT: INTRODUCTION**

Human resource management encompasses any activities connected with managing human resources in an organization, oriented towards the achievement of goals, which are of strategic importance. This concept has existed in the literature since early seventies of the 20th century and gradually ousted the previous concepts, such as personnel management or staff management. Changes in terminology were caused by a new different approach to the people employed within the organization. Previous concepts were oriented more towards administration and approached a human as a workforce. The new approach to the employees consisted in treating them as a precious and strategic resource (Golnau, 2007, p.11). The term 'human resources' is a valuating absolute which emphasizes that role of employees in operation of an organization through the effect that human resources have on utilization of other resources in any organization, such as material and financial resources (Król and Ludwiczynski, 2007, p. 54). Characterization of human resource management should emphasize the following basic features:

- gaining competitive advantage through striving for employees' comprehensive commitment to the achievement of the organization's goals;
- development of the assumptions for human resource management in cooperation and commitment of the managers of the highest rank and their implementation delegated to line managers;
- combining interests of organization with the employees' needs;
- investments in the employees of all the levels in organization through planning and implementation of training schemes (Golnau, 2007, p.12).

The differences between the concepts of human resource management and personnel management have been widely discussed by Szambelańczyk (1995, p. 25), Armstrong (1996, pp. 44-48), Rybak (1998, pp. 9-12), Lundy and Cowling (2000, pp.71-73) or Król and Ludwiczynski (2007, pp. 50-60).

The approach to management of people has evolved throughout the years with the development and implementation of new theories in the domain of organization and management. Theorists and practitioners have sought effective methods of managing staff as

they gradually verified the previous views so that they better suited the reality and guaranteed best possible use in the practice of organizations' operation.

The transformations in the theories of management were followed by changes in the importance and role of personnel function. Throughout its development, one can emphasize the three phases (1999, pp.23-24):

- the first half of the 20th century - operational phase;
- first thirty years of the second half of the 20th century - managerial/tactical phase;
- since the eighties of the 20th century - strategic phase.

Król (Król and Ludwiczynski, 2007, pp. 46-48) added two more phases to the above division. Namely, the zero phase, before the 20th century, which was characterized by the lack of an institutionalized form of personnel function. The latter phase was the prospective phase. Its origins are dated back to the beginning of the 21st century. It is hard to determine how the organization of the future will look like, which makes it impossible to predict how the personnel function will develop. The form of the organization of the future is based on the advances in globalization, informatization, innovativeness and knowledge. The development of personnel divisions and management of human factor will necessitate determination of new prospective directions. As presumed by Ulrich (2001, pp. 267-268), this development might take three directions. Firstly, the personnel function might be restricted to the role of an agent and thus it can shrink. In this situation can be observed the phenomenon of outsourcing and offshoring (Pataki et al., 2011, pp. 125-127). Secondly, it might be divided into the cooperating entities which will perform separate roles. The third option would consist in focusing on personnel function in a strong and centralized unit, obliged to acting towards meeting the temporary needs of individual units in the enterprise.

According to another vision (Krupski, 2003, pp. 24-25) the personnel function in virtual organizations might be expressed by fading borders of the enterprise, resulting from the fact that the employees are employed in other organizations and thus they add new values; organizations will more and more often use the services provided by temporary employment agencies; they will conclude personnel unions of top managers in different enterprises; smart organizations will be based on generating knowledge or stimulation of the staff processes and their consequences in computer spaces.

Continuity and changes can be distinctly perceived throughout the evolution of the personnel function. Other concepts contain the same or much similar problems concerning recruitment, selection, assessment, remuneration and training of employees. The approach to solving the above problems varies: it results from changes in technological, economic, legal, social, cultural and scientific factors of personnel management. Although the development of the personnel function differs depending on the country, sector or organization, the common direction of changes in the approach to performing this function is noticeable. It manifests in the departure from accidental or sporadic activities and transition, through routine administration, towards consolidation and reinforcement of human resource management as a domain, which is equally essential as other domains of management at all three levels: operational, tactical and strategic.

The following processes are also characteristic of the personnel function: institutionalization of the function (establishment of many new units focused on the performance of the function), specialization (narrowing and specification of the scopes of activities in these units) and professionalization of the employees in personnel units through better preparation for performing professional roles (Listwan, 2002, p. 8)

The importance of the personnel function performed by the suitable organizational unit in modern enterprises rose significantly (Kostera, 1999, pp. 24-25).

The responsibility for the implementation of the tasks in terms of management of human potential depends on the size of the organization. In small enterprises, these tasks are

principally performed by the owner, who is a manager at the same time. In organizations, which employ greater number of employees, the intensity of managers' work increases, thus the need arises for division of work and creation of formal structures and procedures; hence the need for creation of the positions and grouping them into the units specialized in actions oriented towards efficient human resource management in organizations. In the case of the more serious problems, the organization might use the external services, which can be offered by advisory and consulting agents that operate in the market.

Human resource management units in modern organizations perform a variety of different tasks. They include in particular:

- analysis of work, which encompasses job design,
- human resource planning,
- implementation of the process of recruitment and selection of candidates,
- control over the process of adaptation to work of new members of the organization,
- formation of the system of remuneration,
- employee assessment,
- training policies (in three areas: education, skills upgrading and development (Ubrežiová, 2011, p. 95)),
- coordination of staff turnover in the organization so that the potential of individual employees is used,
- dismissals which are aimed at adaptation of the number and quality of available personnel resources to the organization's needs (Golnau, 2007, pp. 26-27).

The above tasks should directly relate from previously developed strategies of human resource management and this strategy should be created as related to the general strategy.

## **2. STRATEGIC MANAGEMENT OF HUMAN RESOURCES**

Although originally relating to military activities, the concept of the strategy has been used in management since the sixties of the 20th century (Kreikebaum, 1996, p. 26). The definitions of this term vary; yet it can be principally adopted that '...strategy concerns long-term goals and methods of achievement of these goals that affect the system as a whole' (Gołębiowski, 2001, p.11). Strategy is usually approached as a method the organization behaves and a set of principles that determine this behaviour, planned usually for a longer time-period. When defining the strategy, the four basic components are usually emphasized (Gołębiowski, 2001, p.15):

- domain and scope (range) of enterprise's operation;
- type and sources of competitive advantage which allow for efficient activities in the selected area;
- plans of action and tactics of realization of these actions, which are necessary for achievement of the goals and their distribution in time;
- the expected results (goals), expected and satisfactory groups of interests.

Some authors, with particular focus on Obój and Trybuchowski (1998, p. 167), have attempted to define what the strategy is and what it should not be. They argue that it should not be a response to a temporary disturbances, a set of temporary adaptive activities, a set of figures and a schedule for the following 3 to 5 years, facilitation of the activities from the previous year, the wishful thinking and unreal postulates or the concepts developed and implemented by the narrow circle of managers, not popularized among other members of the organization.

It is essential that formulation of the strategy should be one of the first steps taken towards a success. Another essential step should be implementation of the strategic management, which is defined in the literature in a more synthetic or complex manner. This extended

approach was presented by Krupski (2001, p. 96), who argued that strategic management is '...a process of definition and redefinition of the strategy as a response to changes in the surroundings or in advance of these changes, and even the implementation that stimulates these changes and is coupled to the process, where the resources and competencies of the organization are adjusted so as the adopted long-term goals of development are achieved and the existence of the organization is secured against the events of discontinuity'. The different method of defining this process results principally from the level of detail adopted by the author and from the point of view adopted with relation to the essence of this activity. Regardless of the school of thought of strategic management, five different stages in operation can be distinguished. Each strategy in the organization is created based on several levels which represent a hierarchical layout. Three levels are principally emphasized: starting from top, they include the level of the whole enterprise (corporation), level of the area of activity, domain or a strategic unit and, finally, the functional level (Golnau, 2007, pp. 46-49). This threefold division of the strategy is characteristic of huge enterprises which additionally offer the products of varied structure. Smaller organizations, where the domains of activities are not separated, the strategy can be created at two levels. The strategy will be formulated in a different manner in the case of the enterprises, which operate based on the alliances, associations, unions, and holdings, where they can be created only at the level of the network of enterprises. It is also essential that the strategies defined at any level were also fully integrated with each other, thus taking into consideration the assumptions adopted at higher level.

One of the strategies, which are essential for the whole organization is the strategy of human resources, which is determined by the strategy of corporation and the strategy of a particular area of operation. It represents a long-term idea of acquisition, development and utilization of human potential, oriented towards the achievement of the goals across the organization. This strategy should incorporate the solutions adopted in a particular organization within the most important decision areas concerning the analysis of work, recruitment and selection of candidates, increasing qualifications and skills, assessment, remuneration and labour relations (Golnau, 2007, pp. 46-49).

It should be noted that '...the problems concerning the determinants of human potential development should be an integral part of the strategy of contemporary enterprise. When building strategies, one should take into consideration the aspects of non-physical potential of labour which contribute to the enhanced innovativeness, generation of know-how and creation of smart organization' (Pytel, Strzelecka, 2009, p. 323).

The solutions contained in the strategies of human resources are then reflected by the adopted philosophies, policies, programs and processes connected with management of this most precious resource in the organization. The definition of the strategy of human resources, with the goals of organization and its implementation aimed at gaining competitive advantage is termed strategic human resource management, which can be characterized by the following (Golnau, 2007, p. 50):

- viewing the employed as an essential resource which might contribute to competing for the best position in the market,
- considering the activities of building the philosophy, policy and practices as the best method of utilization of human resources in order to gain competitive advantage,
- conformity and full integration with both general strategy and all the activities taken in the area of managing people,
- orientation toward the implementation of the organizational assumptions.

Strategic human resource management was originally a mixture of traditional approach to the problems of management of human resources with the evolving strategic management, which was reached by terming individual subfunctions within human resource management as

‘strategic’, e.g. strategic trainings or strategic remuneration. The essential importance for the evolution of this idea was from the development of the two models in the eighties of the 20th century: Michigan model and Harvard model, followed by the resource-based model created in the following decade (Listwan, 2002, pp. 49-50 and Golnau, 2007, pp. 50-55).

### **3. HUMAN CAPITAL: THE MOST IMPORTANT RESOURCE IN THE ORGANIZATION**

In management of organizations, both in theoretical and practical aspects, new terms are emerging to define this essential part of the company’s value, that is, non-physical resources. These terms include: capital, resources, intellectual assets or non-physical and legal values. Regardless of the adopted term, they mean non-physical resources in the organization (these which adopt neither physical nor financial form), and they significantly contribute to generating the streams of future benefits and affect the company value (Król and Ludwicyński, 2007, p. 92). Non-physical values are formed in particular by: high qualifications of the employees, internal and external employment structure and the appropriate approach to the problems concerning the employment.

The problems arise with the evaluation of non-physical value in enterprises, although a variety of methods and estimated multipliers of these values have been developed. According to Kasiewicz and Mączyńska (1999, pp. 147-148), ‘...despite long experience of developed countries, neither practice nor theory are sufficient to provide unequivocal answer to the question of how much is the enterprise. The only justified method of evaluation of company value is its market price. To put it simply: the enterprise is worth as much as the interested party is willing to pay.’ This statement, however, seems to be imprecise and subjective as it often occurs that the market value is higher than the value that results from financial analyses because of the non-physical resources. The investigations and attempts to identify all the components of non-physical resources in organization have been made by a variety of research groups, e.g. the team Sveiby, or Edvinsson. They succeeded in formulation of the first definition of intellectual capital, ‘...which means knowledge, experience, organizational technology, relationships with customers, and professional skills which give the enterprise a competitive edge in the market (Edvinsson and Malone, 2001, p. 38 and further). Similar approach to intellectual capital was presented by Stewart (2001, p.13), who argued that it was a total value of capital: human, structural and customer capital.

Among the definitions developed by Polish researchers, the definition of Dobija (2003, p.11) should be emphasized: it says that ‘...intellectual capital is a source of financing non-physical resources in the enterprise that contribute to generation of future benefits, thus significantly affecting the process of creation of the company value ... Intellectual capital can be divided into the capital connected with innovations, structural capital, market-related capital (customer capital) and human capital’.

There is no generally accepted definition of intellectual capital, either in Polish or international literature (Fekete Farkas et al., 2011, pp. 33-34). No agreement has been reached in terms of its components. However, if common features of different theoretical and practical approaches are considered (see e.g. Kozińska and Żor (1998); Herman and Szablowski (1999); Antczak (2004); Dudycz (2005)) its three components can be indicated: human capital, structural capital and the capital of external relations.

When defining individual components, one can point to the importance of intellectual capital to the value of the whole organization. Therefore, according to Król (Król and Ludwicyński, 2007, p. 97), ‘...Human capital of the organization encompasses an entirety of specific features and properties inherent in employees (knowledge, skills, abilities, health, motivation) which have a particular value and are a source of future incomes, both for the

employee (owner of human capital) and for the organization which uses this capital under particular conditions.’

Structural capital is a capital which is generated as a result of a particular effect of human capital and represents its physical form expressed as permanent values for the organization. Therefore, its elements include: databases, trademarks, organizational structure, patents or authorship rights and all that helps increase employees’ productivity. This is always the property of the enterprise (Król and Ludwicyński, 2007, p. 97)

The last component of the intellectual capital is the capital of external relationships, which were generated as a result of all the interactions with entities (also with institutions of the company’s environment, which are of essential importance to efficient operation (these contacts are expected to generate benefits for the future). This capital is mainly restricted to customer capital (as a purchaser of the goods offered), but it takes into consideration the contacts with suppliers, competitors, media and local community as well as with insurance and fiscal companies (Król and Ludwicyński, 2007, p. 98).

As mentioned before, the contemporary organizations, in order to strengthen their position in the market, enhance their quality and improve their results through the resources they have, with particular focus on non-physical resources inherent in humans. Numerous publications (Marcinkowska 2000; Białasiewicz, 2004; Dudycz, 2005; Nita, 2007; Szczepański 2007; Pardela, 2009) have emphasized that measurement of intellectual capital, including human capital, is still not easy and unequivocally understood by theorists and practitioners of management, economy or finance. The agreement has been reached in terms of the importance of this element for the whole company value. Due to the fact that this is not the main focus of this paper, the problems of measurement of intellectual capital will not be included.

Although no generally accepted definition of human capital has been adopted due to the ambiguity of this concept, dependent on e.g. the level of consideration (macro scale, organization or individual), it can be understood as ‘a capital incorporated in man’ with such components as knowledge, skills or health (Król and Ludwicyński, 2007, p. 110). As Strużyna (2000, p. 48) put it, the formulated explanations for the concept of human capital are of unclear and ambiguous character and vary depending on the cultural contexts, paradigms and fashions and language practices used by different authors. When ordering this multitude of views, Strużyna explains that ‘...the ideas are arranged in a series, from relatively concentrated knowledge of the reasons of interest in the concept of human capital towards the fuzzy knowledge about other dimensions of capital. This distributed knowledge goes considerably beyond the problems of human capital and reaches to other areas of research interests as it is impossible to artificially distinguish between the content hidden in the concept of human capital and other phenomena, which affect the views and behaviours of groups and individuals. The systematized knowledge about human capital can be treated only as a crystallized view which provides the pivot point for a specific mosaic of general knowledge and concrete practice (Strużyna, 2000, pp. 52-53)’.

In order to further understanding of the essence of human capital, let us consider it at the macro level and the levels of a team and an individual. The macro scale means realization that the format and composition of human capital substantially affect the method of development of societies, nations and mankind (Makowski, 2002, p. 181). Based on this, one can argue that ‘human capital means a resource of knowledge, skills, health and vital energy contained in a society or a nation. Human capital is a resource, which is represents a source of future satisfaction, salaries or, more generally, services or a particular value. A distinguishing feature of human capital is that it is somehow a part of a human: ‘...it is human as it is embodied in people’ (Schultz). One cannot divide themselves from human capital or, more specifically, human capital always accompanies a particular person’ (Domański, 1998, p.67).

At organizational level, human capital is contained in specific characteristics and properties inherent in individual employees, with particular value that can be transformed into revenues for both employee, who is the owner of the capital, and for the organization which uses the capital on certain terms (Pocztowski, 2003, p. 45). This capital, which takes into consideration the synergy effect, is generated through capitals of individual employees or collective capital. Another level at which human capital can be considered is the level of the team. This capital is generated through summation of individual capitals of employees and might equal this total, be lower or higher. Its size depends on the method of managing the team. If the team is improperly managed, the human capital is wasted. If a synergy effect is obtained through management, the team's capital exceeds the total of individual capitals. The deepest level is individual level. Each of us makes investments in themselves and, through collecting of a variety of expenditures, such as education, knowledge or experience, increases their value and ability to work. Additional components which form individual capital are: looking for a job, reproduction of information, migration or health status. Others include: talent and aptitudes, raising, personality, looks, reputation or the system of values. Unfortunately, technological or organizational advances or changes in the methods of management cause that individual capital wears out (Król and Ludwiczynski, 2007, p. 114)

The development of personnel functions in the model of human capital remains at the stage of formulation and crystallization. It should be noted that two parties are present in the process of accumulation of human capital in organization: an employee and enterprise. The employees strengthen their capital through education, training and new experiences, whereas the enterprise uses a variety of strategies aimed at generating this capital, or purchases it outside the organization. It is also of essential importance, both from theoretical and practical standpoints, to determine the relationships and connections between human resources and human capital in the organization and to determine the method of transformation of these resources into capital. These strategies might adopt a form of long-term decisions, oriented towards:

- adjustment of human resources to variable conditions in their environment;
- effect on the external environment
- strengthening personnel divisions with expert teams,
- effective system of prizes as an answer to increased productivity,
- formation of the internal labour market in the enterprise (Sajkiewicz, 1999, p.58).

'Strategic human resource management leads, in longer perspective, to transformation of human resources into a precious capital in the enterprise. In order to achieve this, the plan of long-term managerial activities is developed: they are subordinate to the priority principles... Strategy of human capital should be linked to the strategy of corporate culture... The strategy of changes in corporate culture and consistent implementation of this strategy should be a starting point in building the strategy of human capital ... The main contributing factor in the strategy of human capital is staff competencies' (Sajkiewicz, 1999, pp.59-62).

Therefore, good management of human resources and effective utilization of the potential of this management are the best solution for building this most valuable resource in organization.

#### **4. STRENGTHENING HUMAN CAPITAL: TRAINING AND IMPROVEMENT**

The new orientation integrates human resource management into the holistic strategy of organization's management and active building corporate culture and the investments in human capital which are treated as a foundation for making a success in the enterprise. The essence of the strategy of human resource management lies not only in the activities connected with employees, the comprehensive personnel process, but also in the basic canon

of values which an enterprise uses with respect to the employees in their activities (Walczak-Duraj, 2009, p. 23). In order for the management of human resources in organizations to be effective and to contribute to the achievement of the goals, it must be implemented regularly, according to the adopted principles, and be constantly supervised and considered for possible corrective measures. One of these comprehensive activities is the implementation of the personnel processes viewed as the interrelated activities aimed at acquisition of employees and utilization of their potential to achieve the previously set goals (Jurkowski, 1998, p.10). The personnel processes is composed of the consecutive stages: human resource planning, recruitment, selection, professional adaptation, training and improvement, performance measurement and personnel transfer which concerns moving, leaving and dismissing of employees. It is also essential that the principle of 3R (right person, right place and right time) should be used during the implementation of this process. All the stages are equally important as any previous stage is the starting point for taking actions during the next stage. These stages have been widely discussed in the literature and would be sufficient for writing another paper (see Król, Ludwicyński, 2007; Penc, 2007; Szałkowski, 2000; Czarnecka, 2010; Dyszy, 2008 and others).

The process of training is an activity which, in order to be effective, must be performed regularly and according to an adopted plan of actions. The main components of the training system should include:

- identification and analysis of training needs as a result of the previous survey;
- preparation of the plan of trainings which satisfy all the needs;
- implementation of training initiatives;
- evaluation of the course and effects of the trainings (Król, Ludwicyński, 2007, p.452)

In fact, the process of training and improvement should be carried out permanently, as it should be noted that constant civilization, technological or scientific advances cause that 'you move back as long as you stand'. The publications concerning these problems contain a variety of different definitions connected with the determination of the training needs, such as: recognition, identification, analysis and definition of the needs. The recognition and analysis of the training needs provide the most comprehensive description of the activities: they consist in determination of the needs of individual employees and their teams and the whole enterprise and then analysis of these needs which consists in determination of the hierarchy of importance, interrelationships and the feasibility with respect to the available budget (Król and Ludwicyński, 2007, pp. 453-458). As the demand rises, the training market develops more dynamically and responds with a broad range of services. The feedback from the enterprises can be explained with an increasing rate of economic and civilizational transformations, willingness to adapt to new conditions of work and acquiring new skills as well as the discrepancies between the knowledge acquired at schools and actual market demands, elongated period of physical activity and individual needs of human development (Ładyga, 2010, p. 301). Given a variety of the definitions, the training can be considered as a process of increasing the knowledge of employees, extending their qualifications and equipping them with new skills which are necessary for achievement of their own goal or the goals of the organization. Training is always investments in humans to improve the efficiency of their work. The aim of training is to increase the employees' value, bring their characteristics and qualifications closer to the required professional profile, enhance professional competencies or improve personal traits in consideration of their individual career paths. The assumed goals of the training should be closely related with the mission and strategy of the enterprise, character of the activities, customers' demands, seasonality of production (or services) and work safety (Ładyga, 2010, pp. 301-302). Trainings predominantly refer to improvement and development of the adults who previously completed



their formal school education. Although seemingly similar to that in children, learning process in adults differs in many aspects and necessitates different approach.

The methods and techniques of training proposed by practitioners and theorists cause that each interested party might find their own methods of knowledge acquisition. According to different criteria, training methods are often divided into: passive (traditional) and active (activating), individual and group methods, in and out of work post, as well as demonstrative, simulative and practical methods. Other divisions distinguish between involuntary and voluntary methods and learning in parts or global learning. With more systematic approach to the problem, one can also distinguish between the methods of learning through: imitation, using ready-made algorithms, trial-and-error and problem solving. The development of this domain is followed by the evolution of unconventional methods based on general cognitive and emotional growth, which include interpersonal training, neuro-linguistic programming (NLP), assertiveness training, positive thinking training and other heuristic methods (brainstorming, relaxation methods or didactic games). Some of them have ceased to be termed unconventional and they are widely used in the practice of trainings. Pawlak suggests the following classification of the methods of training according to the method of acquisition of knowledge and skills: passing, problem-based, exposing, verbal and practical methods (Król and Ludwiczynski, 2007, pp. 464-465)

## 5. CONCLUSIONS

In conclusion, it should be noted that acquisition, development and utilization of knowledge, skills and qualifications is becoming a priority problem in contemporary organizations when planning and implementing training and development policies. Without adopting a general vision of how the knowledge is supposed to be acquired, developed and passed, no efforts and costs of training will translate into adequate effects. The policy of trainings, developed for the organization, might help utilize the knowledge accumulated in human resources and make it a source of information for all the employees. The process-based approach causes that training policies and development of human resources provides a good foundation for supporting the efforts in the area of knowledge management in the organization. It is not only essential to acquire, develop and maintain knowledge, but also share it within employees' groups, understood as a transfer of knowledge between the people and teams. Contemporary unstable and more competitive economic conditionings necessitate strong commitment from the employees, participation in decision-making processes and increase in innovativeness in the organization. This can be ensured in the enterprise through adequate resources, including human capital generated by employees and their very own capital: knowledge, abilities, competencies, potential and commitment. Knowledge accumulated in human resources is a capital, which helps reduce the time for achievement of organization's goals. Knowledge, which is inherent in personnel and performs different roles, might be of both subjective and intuitive character and its resources represent a means of production and the raw material for production at the same time. Unfortunately, deepening knowledge and skills necessitates financial outlays. Hence, in the times of crises, the enterprises (with particular focus on small and medium enterprises) save on trainings or organize them in a poorly thought out manner without sufficient awareness of their importance. It is self-evident that human capital plays a key role in gaining competitive advantage, creation of innovations and building company's success. Modern theories of development make development of enterprises dependent on the rate of accumulation of not only physical but also human capital, which is deposited in knowledge, skills and competencies of the employees.

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*Miklós Daróczy*

### 3.3 EFFECTIVE TEACHING OF MANAGEMENT SKILLS AND MODELS

**Summary:** Effective teaching of engineering economy, general management, management models and skills basically influence the future activity and success of engineering managers or industrial engineers. Engineering economy requires a coupling of technical analysis and economic feasibility to determine the optimal course of action for various engineering scenarios. The rational time, resource and cost planning, the correct decision-making process and the selection of the optimal versions are essential in case of an investment. The first aim of this paper is to present and prove how the different disciplines, management models and information technology can support the solution of technical-economic tasks in agriculture or industry. Some of the most important scientific areas, skills and models which are taught for our students will be briefly presented.

Effective teaching demands more than the acquisition of different skills. To adapt to the educational needs of a particular major, the teacher needs to understand the theory of learning and teaching, so that every teacher can develop his or her own methods. There are a lot of teaching methods in education to inspire students for individual learning. The second aim of this paper is to characterize these teaching methods in engineering management educational programmes based on special literature and gathered experiences.

**Keywords:** functional management areas, project management skills, teaching methods

## 1. INTRODUCTION

Engineering managers' professional knowledge is very important, which means a deep theoretical background and practical skills in agriculture, industry or services. The technological knowledge is also important because technical resources and equipment play an important role in the whole producing or manufacturing process. All of these are really necessary, but not enough to manage a company or a complex project successfully, because economic and general management knowledge is also badly needed.

Management skills and the use of up-to-date management models basically influence the activity and future success of young engineers. There is an increasing need to use different types of software for the rational resource and cost management, the appropriate utilization of machinery, the correct decision making in investments and select the optimal version (Belcourt et al., 2000).

The first aim of this paper is to present and prove how the different methods and computer programs can support the solution of technical-economic tasks in agricultural or industrial projects. A detailed knowledge of general management is really useful, but a wide-range of functional management areas are also have to be known. All of these functional areas have different characteristics and an experienced industrial manager has to know most of them. In case of a small company or project these functional management areas are not separated, they usually appear as complex tasks. It is not easy to list the most important functional management areas because they are all necessary, but in this paper seven of them are examined.

The effective teaching and improving of these management skills are important tasks. It is especially difficult in the basic (graduate) level of studies when the students do not have enough experiences in managing and completing projects (Hartman, 1999). In the different courses it needs different approach, teaching methods and case studies. One of the important goals of education and training is to help students develop the ability to continue learning

after their formal education is complete, thus it is reasonable that they should have supervised experience in learning independently. They should gain experience in which the instructor helps students learn how to formulate problems, find answers, and evaluate their progress themselves. We might expect the values of independent study to be greatest for students of high ability with a good deal of background, since such students should be less likely to be overwhelmed by difficulties. Beside this, motivation and work habits are also very important (McKeachie and Svinicki, 2010).

The second objective of this paper is to characterize these teaching methods in engineering management education based on the overviewed special literature and on the gathered data and experiences from our colleagues and students.

## **2. MATERIALS AND METHODS**

“Engineering Management” or “Industrial Management” is a relatively modern teaching programme (major) in Hungary. On our Faculty it has a ten-year history. This major provides complex knowledge and skills for the students. Comparing the different Hungarian and international curricula of the different engineering teaching programmes and courses it can be stated that the widest knowledge in engineering economy and in general and functional management is provided for engineering managers. The staff members of our Institute have been teaching different engineering students for more than thirty years.

Several teaching methods are used in our education to inspire students for individual learning. I examined the project method and, within problem-based learning, the case method and simulations. Our colleagues have overviewed hundreds of syllabuses of several different courses (life-science, engineering, economy, management) and staff members and engineering management students were interviewed to find the correct answers for the following questions:

- Do our colleagues use project method to help students to prepare for independent study?
  - Do students have a clear question, problem or goal?
  - Can the methods help students to develop their strategic learning?
  - Do students get feedback on their progress from supervisor and fellow students?
- Is case method used in a wide variety of disciplines?
  - Is the given problem well clarified?
  - Do students develop hypotheses about the causes of the problem?
  - Are there conclusions and recommendations?
- Are computer simulations more effective in teaching research methods than traditional “wet labs” are?
  - Are students active participants rather than passive observers?
  - Do students make decisions, solve problems and react to the results of their decisions?

## **3. RESULTS AND DISCUSSIONS**

### **3.1. THE IMPORTANCE OF DIFFERENT SKILLS**

The educational program of the engineering management students consists of three main parts, life science, technical science and human and social science. These scientific areas provide the complex knowledge of our students. The different skills of engineering managers basically influence the successful running of a company or the final result of a certain project. Managing an agricultural farm or project is a very complex task with really different activities, technologies and responsibilities. Planning of the strategic goals and the

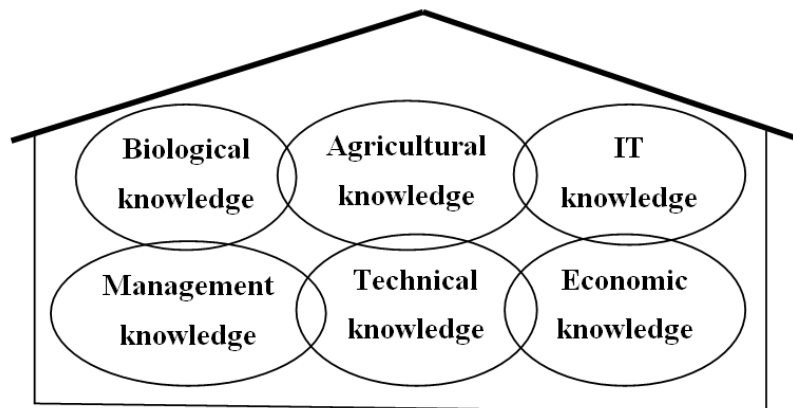
organization of the operative tasks all need theoretical knowledge, skills and experiences. The results of innovation appear continually in agriculture. New materials (chemicals, seeds), technical equipment (harvesters, cultivators) and modern devices (GPS, robots) force experts to use up-to-date farming technologies. It requires more time and knowledge to learn the rational operation of the machine park – according to the rapidly changing environmental law – which means a hard task for the managers. There is a great number of difficult decisions have to be made concerning technical resources, when we choose, buy or lease them. Applied information technology must be also mentioned as an important area. Without this basic knowledge it is impossible to make the optimal decisions.

All of these are necessary, but not enough to manage an agricultural enterprise successfully. Engineering and general management knowledge is also needed, the most important areas are strategic-, marketing-, cost- and machinery management. Management skills and the application of the different management models determine the activity and long term success of the agricultural company or the planned project (Goldratt, 1997).

It is really difficult to learn and obtain all these skills because these scientific areas are rather different (Figure 1). One has to have a wide range of interest to learn all of them.

- *The science of biology, chemistry and agriculture* can be interesting for those who are really close to nature and environment. Mostly these students like animals and rural life, but they are not fond of machines, engines or the marketing mix. They do not like managing people either.
- *Technical science* is really hard to learn. Mathematics, physics, mechanics, technical drawing, computer aided design, the operation and repair of machines are the basic courses. They usually like engines, vehicles, industrial equipment and the connecting activities very much, but they are not necessary close to nature and do not like applied economics and management at all because they consider them as unnecessary subjects.

**Figure 1. Specific knowledge to manage agricultural farms and projects**



Source: own construction

- *Information technology* is again a very special scientific area which one has to like and understand. Our IT students – based on their answers – are not fond of technical solutions and they do not like nature or agriculture. Managing people or organizing real life activities seem to be very complicated for them.
- *Economics and management* is popular today. Many young people choose this field of science all over Europe. They learn macro- and micro-economics, law, finance, marketing, tourism, rural development, etc. Most of them like it because it seems to be interesting for them and they try to become well paid managers of multinational companies as soon as

possible. They mostly do not like agriculture or they are not fond of machines except their own cars.

The level of personal motivation to obtain this complex knowledge is changing on a wide range. The student's family background, previous studies, personal characteristics and skills play important role in motivation.

### 3.2. THE ROLE OF MANAGEMENT KNOWLWDGE AND SKILLS

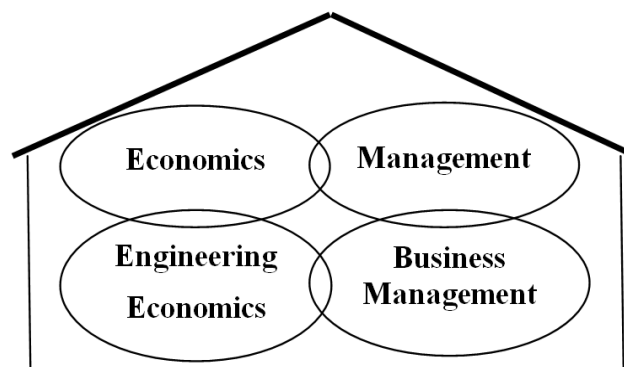
Economics and general management provide a solid theoretical background. Microeconomics include theory of demand, theory of the firm, demand for labour and other factors of production. Macroeconomics covers the forecasting of national income the analysis of major economic factors the role of fiscal and monetary policies, economic growth and determination of consumption and investment levels. General management studies can cover the practice of management, approaches to management, organizations, delivering change, enhancing customer relations, enabling continuous improvement (*Figure 2*).

Engineering economy is the discipline concerned with the economic aspects of engineering; it involves the systematic evaluation of the costs and benefits of proposed technical projects. The principles and methodology of engineering economics are an integral part of the daily management and operation of different companies, government units or agencies.

The obtained principles are utilized to analyze alternative uses of financial resources, particularly in relation to the physical assets and the operation of an organization (Sullivan, et al., 2011).

Business management provides students with the tools they need in order to launch and manage a business successfully. Building the business plan, beginning considerations, marketing and financial considerations, sources of funds, managing inventories, controlling and managing people are the most important topics. Business management can be a useful synthesis of the different management areas (Scarborough, 2008).

*Figure 2.: Specific knowledge of economics and management*



Source: own construction

A deep knowledge of general management is really useful, but a wide range of functional management areas also play important role. All of these areas have different characteristics and an experienced manager or project manager has to know most of them. In a case of an agricultural project these functional management areas are not separated, they usually appear as complex tasks. It is not easy to determine the most important functional management areas because they are all necessary, but the following seven of them are taught for engineering managers on our basic and master levels (see *Figure 3*).



Some typical techniques and methods concerning the following functional management areas are also listed in brackets:

- *Marketing management*: Students mostly like this course and they consider that it is useful for them. Agricultural and industrial marketing aspects are also covered. Market segmentation, targeting and positioning, product strategy and new product development, distribution strategy, industrial marketing communication and planning are the most relevant topics. (e.g. marketing mix, PEST analysis, MABA analysis)
- *Strategic management*: Hungarian enterprises do not pay much attention to strategic planning which makes their situation hard in a crisis. This course is taught on MSc level. Students have to learn the theoretical background and the practical application of different management models to analyze the factors associated with customers, competitors and the company itself. All of these can provide the basis for maintaining optimum management practices. (e.g. SWOT analysis, BCG, GE Mc Kinsey, 7-S framework, Benchmarking, Business process redesign)

**Figure 3. Functional management areas (Kocsis et al., 2002)**



Source: own construction

- *Project management*: Engineering management students learn it on a BSc and MSc level, they mostly enjoy the classes. The three primary forces behind project management are the growing demand for complex customized goods and services; the exponential expansion of human knowledge and the global production-consumption environment. Project management, though not problem-free, is the best way to accomplish certain goals (Meredith and Mantel, Jr., 2000). (e.g. Gantt-chart, CPM/PERT, WBS)
- *Production management*: Students find some parts of the course material really hard to learn and understand but they do think that they need this knowledge. Our students have to learn to coordinate and control the various activities required to make a product or a service. The curriculum covers effective control of scheduling, cost, performance, quality and waste requirements. They have to examine the key international issues, new technologies and the financial side of product management (Gorchels, 2005). (e.g. Activity-based costing, MRP, TQM, JIT, Lean-thinking, Six sigma, FMS, CIM)
- *Innovation management*: Managing innovation is challenge in any organization and demands a wide range of skills. Engineering management students mostly find this course interesting and most of them understand why they have to learn it. Some groups of

students learn it as “Technical Development” that is part of innovation management. In business, innovation often results from the application of a scientific or technical idea in decreasing the gap between the needs or expectations of the customers and the performance of a company’s products or services (Goffin and Mitchell, 2010). (e.g. Brain storming, Road-mapping, Innovation circle, Philips-66, Delphi)

- *Quality management*: Many of our students write their theses about this topic, spend their professional practice or work after graduation on this special field. Quality in the different size of organizations can be achieved with intelligent use of various concepts, principles, tools and techniques. For students coming to the subject for the first time, these philosophies associated with quality management can be quite overwhelming. The curriculum covers the basic concepts of quality and quality management, the ISO regulatory frameworks, the ways of thinking about quality and achieving quality. Managing quality in practice using the process approach (Hoyle, 2012). (e.g. PDCA, Kaizen, Root cause analysis, Pareto analysis, Poke-Yoke, QFD, EFQM)
- *Human resource management*: Managing people as human resources is essential in agricultural and industrial companies of all sizes and types. As our former students – engineers and engineering managers – reported their professional difficulties basically originates from managing people. As part of the business management studies the curriculum covers the following HRM functions:
  - Strategic HR management.
  - Equal employment opportunity.
  - Staffing.
  - Talent management.
  - Total rewards.
  - Risk management and worker protection.
  - Employee and Labor relations.

Strategic management and human resource management are the weakest fields of the Hungarian companies. Top management often forgets that “People as human assets are the “glue” that holds all the other assets, such as financial and physical ones, together and guides their use to better achieve results. As a field, HRM is undergoing significant transformation. Human resource management is designing management systems to ensure that human talent is used effectively and efficiently to accomplish organizational goals” (Mathis and Jackson, 2010). (e.g. *Strategic human capital planning, Competing values of organizational effectiveness, Six thinking hats of de Bono*)

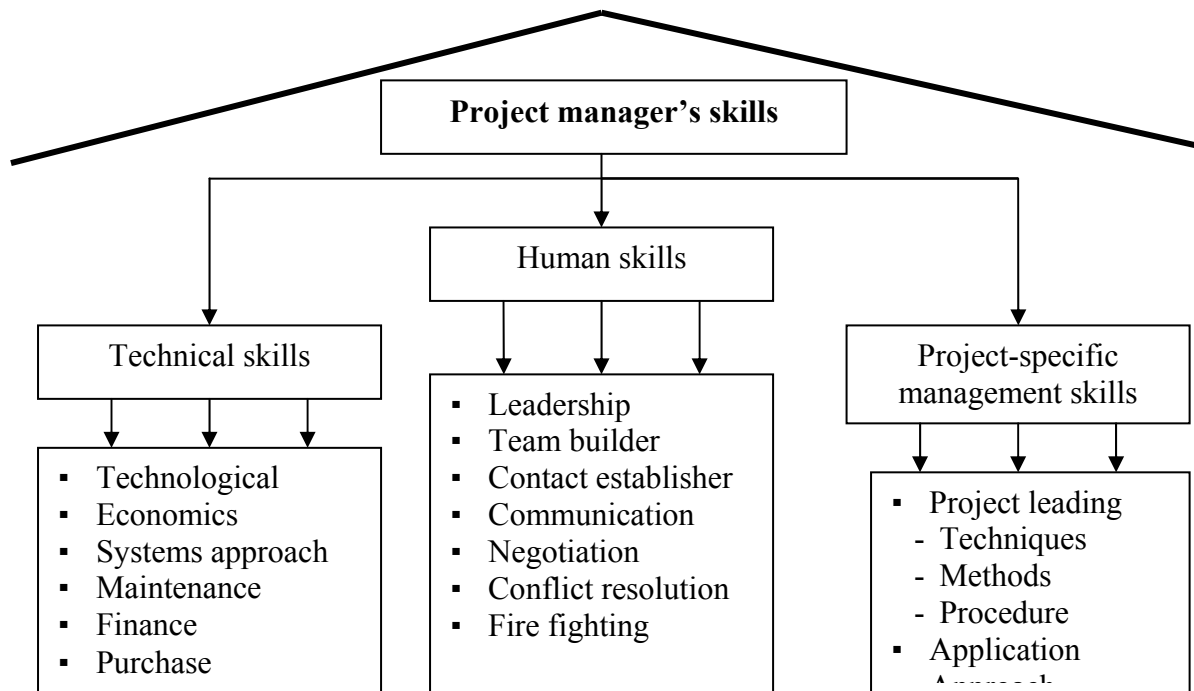
There are two further management areas information and change management. These very important subjects are mostly taught as parts of the General Management course in some related postgraduate teaching programs.

*Information management* is also about the application of various management techniques to collect information, communicate it within and outside the company and process it. *Change management*, within a few classes we teach about the role of managers, how to minimize resistance and how to avoid critical mistakes during change.

### **3.3. SPECIAL DEMANDS ON THE PROJECT MANAGERS**

Project management is a special bridge between strategic and production management. That is why it has special techniques, methods, approach and requires special skills as well. Relying upon Görög’s (2006) findings Figure 4. shows the structure of management skills.

**Figure 4. Project manager's skills**



Source: own construction (based on Görög, 2006)

A number of demands are unique to the management of projects, and the success of the project manager depends to a large extent on how capably they are handled. These special demands can be categorized under the following three headings.

### 3.3.1. Technical skills

*Technical knowledge* the project manager (PM) is not expected to have an expert's knowledge of each of the technologies that may be germane to the project. The PM should be able to explain the current state of the project, its progress and its problems to senior management. He should also be able to interpret the wishes of management and the client to the project team.

*Systems approach* to be successful the PM must adopt the system approach. The project is a system composed of tasks which are, in turn, composed of subtasks, etc. The system, a project, exists as a subsystem of the larger system, a program that is a subsystem in the larger system, a company, which is...etc. The PM must understand the influences and their impacts on the project and its deliverables.

*Maintenance* means actions necessary for retaining or restoring machines and equipment to the specified operable conditions to achieve their maximum useful life. It includes corrective and preventive maintenance. Many minor technical difficulties occur, always at inconvenient times, and need to be handled rapidly.

### 3.3.2. Human skills

*Communication*, the PM must be a person who can handle responsibility. The PM is responsible to the project team, to senior management, to the client, and to anyone else who may have a stake in the project's performance or outcomes. Much project communication takes place in meetings that may be run effectively if some simple rules are followed. In virtual projects much communication is via high technology channels. Above all, the PM must keep senior management informed about the current state of the project.

*Negotiation*, the acquisition of resources requires negotiation. Dealing with problems, conflict, and fires requires negotiation and conflict resolution. The same skills are needed when the PM is asked to lead the project to a successful conclusion – and to make the trade-offs required along the way.

*Fire fighting*, should be organized so that fires are detected and recognized as early as possible. This allows the fires to be assigned to project team members who specialize in dealing with specific types of fires. Although this procedure does not eliminate crises, it does reduce the pain of dealing with them.

### **3.3.3. Project-specific management skills**

*Techniques* for new PMs, training in win-win negotiation is as important as training in PERT/CPM, budgeting, project management software, and project reporting.

*Methods* several different management methods are used by PMs in strategy oriented project management one of them is the WBS.

A project manager without these skills cannot be successful. In addition, the PM should be a leader, and adopt a participatory management style that may have to be modified depending on the level of technological sophistication and uncertainty involved in the project. Another critical project management skill is the ability to direct the project in an ethical manner (Meredith and Mantel, 2000).

## **3.4. THE ROLE OF EDUCATION**

The large scale of different skills listed above have to be taught for future managers. Our colleagues usually pay much attention to use the different teaching methods to teach engineering manager students during their university studies.

### **3.4.1. Project method**

The student who completes a project often has a sense of mastery going well beyond that of completing a conventional assignment. Students working on a project have to solve real problems and to use their knowledge in new ways – characteristics of learning situations that both motivate and facilitate more lasting learning.

Projects sometimes fail to work well. *What can be done to increase the probability of success?*

- Be sure the student has a clear question, problem, or goal.
- Help students be explicit about the strategies they plan to use, about their time management, and how they will monitor their progress.
- Have students compare notes and get feedback on their progress from fellow students.

### **3.4.2. Case method**

Teachers can write his/her own cases, but one can find cases already written that are appropriate for given purposes and are motivating for the students. Typically case method involves a series of cases. One of the goals of the case method is to teach students to select important factors from a tangle of less important ones which may form a context to be considered. Usually cases are presented in writing, digital video disk or role-play of a problem situation can be used.

Before assigning the case study, *the following aspects should be clarified:*

- What is the problem?
- Develop hypotheses about what causes the problem?
- What evidence can be gathered to support or discount any of the hypotheses?
- What conclusions can be drawn? What are the recommendations?

When the teams report, the teacher's role is primarily to facilitate discussion, i.e. listening, questioning, clarifying, challenging, encouraging analysis and problem solving, and testing the validity of generalizations. He/she can make a summary of points established, additional information needed, and the evidence supporting alternative approaches.

If the case is one that actually occurred, students will want to find out what actually was done and how it worked out. Sometimes the teacher might bring in someone working in the field so that students cannot only see how an expert analyzes the case, but also ask questions about what really happens in practice (McKeachie and Svinicki, 2010).

### 3.4.3. Simulations

Many simulations are available on computers. Research and laboratory simulations are available for courses in the sciences, and interactive social simulations can be used to teach foreign languages. The effectiveness of simulations depends on the degree of instructional support or structure. Research on traditional as well as non-traditional teaching has shown that students with low prior knowledge tend to benefit from a higher degree of structure than students with greater knowledge or intelligence (Cronbach and Snow, 1977)

Simulations sometimes fail to work well, *the following aspects should be taken into consideration*:

- What is the complexity of the simulation like?
- Does the simulation fit the time and facilities limitations?

The applied simulation may be either too simple or complex to achieve the kind of generalization of concepts or principles that the teacher desires. It can be hard to find a simulation that fits the time and facilities limitations of typical classes. Devising someone's own simulation can be fun but also time consuming (McKeachie and Svinicki, 2010).

Based on our experiences we can state that students coming from grammar schools after graduation are usually used to have some alternative teaching methods, such as project methods or case studies. They learn how to work with other students in groups, and how to present their findings. These methods make education a lot more interesting and fascinating. Without these, the traditional lecture-discussion education at the university level seems less interesting and motivating for them. University lecturers have to make a lot of effort to raise the students' attention to the course material as effectively as they can. Not only to inspire them to attend their courses but also to have them to pay attention while they are on lectures. According to our experiences these teaching methods are not so commonly used at our university. Problem-based learning is more often applied in master courses. If our master students are to learn how to think more effectively, they need to practice thinking.

Beside applying the different teaching methods it is a difficult task to develop or create a new teaching material. When developing some parts of the curriculum or course syllabuses the following "5 *Ws+H*" method can be used (Table 1).

**Table 1. How to follow the "5*Ws+H*" method?**

What is the question?		What is the answer?
WHOM?	<b>do we have to teach?</b>	Engineering manager students
WHAT?		Courses/subjects/knowledge/skills...
WHEN?		BSc/MSc/PhD levels, year, semester...
WHERE?		Classroom/lab/field/workshop/internship...
WHY?		The objective of the course/knowledge/skills...
HOW?		Teaching methods: traditional/project/case method...

Source: own research

Our faculty members have to renew the course syllabuses year by year. The content of the above listed subjects like economics and general management, enterprise, innovation, marketing, production, quality and project management have changed a lot after the transition. New subjects appeared and a wide range of management techniques, methods and new special software have become part of the curriculum. Economics and management is a rapidly developing scientific area, thus the continuous improvement is essential.

Our students have to write special assignments and we ask them to work in teams. We teach the basic rules of teamwork and try to apply the problem solving in practice. During the summer time our students spend some weeks in a company dealing with professional tasks and real problems. They gain a general overview about the material flow and about the management tasks of the organization. They spend some time on the different departments and work with the technical managers. By the end of the practical period they have to write an assignment or their theses.

We also offer short term postgraduate courses in a wide range of topics. It can be connected to a certain functional management area or to a management technique, method or software package. The teaching method is usually different for them, because after a short theoretical background they get a really practical oriented case study or a special training developed for the daily need of the company. Education and training are very important, but they cannot substitute practice and experience.

#### **4. CONCLUSIONS**

Successful business or project management requires experienced managers with different knowledge and skills. In the case of an agricultural farm or project the degree of complexity is even higher because technical, agricultural, biological, IT, economic and management knowledge and skills are really essential.

In the frame of this paper, I proved the importance of the different skills and I have briefly characterized the main (seven) functional management areas which are taught for our engineering manager students. Project management is a bridge between strategic and production management and it plays a very important role in technical development. I have listed in a structured way the project manager's skills. Our students and the future project managers have to learn the related techniques, methods and the use of professional software. A young manager without - at least - the basics of these skills cannot be successful in managing projects. An experienced project manager should be a leader and has to direct the project in an ethical manner.

On our Faculty, well trained teachers use project method, case method or simulations. These effective teaching methods are valuable parts of their teaching strategies. The general principle is that students like to solve problems that offer a challenge but are still solvable is important. Motivation is not the only reason to use problems. If students are to learn how to think more effectively, they need to practice thinking. Moreover, knowledge learned and used in a realistic, problem-solving context is more likely to be remembered and used appropriately when needed later.

Based on our experiences it can be stated that our students coming from grammar schools after their graduation are usually used to have some alternative teaching methods. They learn how to work with other students in groups, and how to present their findings. When our staff develops a running course or create a new course syllabus for our students, they are recommended to use the "5 Ws+H" method.

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*Monika Barton*

### **3.4 DEVELOPING CORE COMPETENCIES OF SME MANAGERS USING HEUTAGOGY PRINCIPLES**

**Summary:** What are the most effective ways of educating today's young SME managers and entrepreneurs? How can a formal tertiary education institution become a good supporter and partner in developing the most important entrepreneurial skills for managing modern SMEs in the environment of global competition? In today's world of constant hunting down for innovation it is getting obvious that learning and developing of entrepreneurial skills at the early stage is becoming vital for most new SME managers. Czech tertiary institutions are often criticized for not meeting the increasing market needs for changing competencies especially in SME management. Effective development of entrepreneurial skills requires changes in approach toward traditional learning from both sides – from educator and from students as well. Heutagogy was developed and introduced in 1999 as a learner-centred and self-determined concept, which encourages students to become more proactive during their learning process. With information more easily accessible and students capable of using modern technologies, the classes are becoming more a place of sharing and discussing rather than traditional knowledge transferring. This is also accelerated by the fact that many students of entrepreneurship and SME management often start their working career while still studying. First experience with using principles of heutagogy in entrepreneurship and SME management education shows very promising direction.

**Keywords:** andragogy, coaching, entrepreneurship, heutagogy, intrapreneurship, learner-centered development, lifelong learning, self-determined learning, SMEs

#### **1. THE IMPORTANCE OF ENTREPRENEURSHIP COMPETENCIES DEVELOPMENT**

Globalization is one of the key influencers responsible for the more frequent changes in our business environment. Changes become a constant element of daily lives of most managers and business owners.

It is much harder to respond changes effectively especially in the environment which does not provide too much safety and is hardly predictable. To be able to cope with changing markets, more people need to be involved in decision-making process. This involves not just strategic decision making by top management or company owners, but it includes also small daily decisions of many employees on middle or lower levels. Those employees need to perform more and more as entrepreneurs, which often requires changes in their existing development plans. They no longer can count on safe company environment but need to seek actively niches for innovation to keep their companies competitive.

##### **1.1. ENTREPRENEURSHIP AND OTHER -PRENEURSHIPS**

Development of entrepreneurial competencies is becoming vital not just for those who plan or already are business owners. As the decision-making needs to be delegated to lower levels in company structures and more people are involved in business growth of their companies, entrepreneurial competencies are becoming useful for much broader group of people.

A new phenomenon was open in mid 80s of 20<sup>th</sup> century by Pinchot (1985). He pointed out that entrepreneurship is going to be vital also for larger companies to deal effectively with



its competition. Those companies need intrapreneurs to be able to sustain their comparative advantage on a market place. “People are our greatest assets” is a popular phrase for many annual reports’ summaries. Last decade proves it cannot be just an empty phrase to please shareholders. The level of intrapreneurship and how it is supported often shows how much true the above-mentioned phrase is.

### **1.1.1. Discovering intrapreneurship and corporate entrepreneurship**

Intrapreneurship is often described as a entrepreneurship within a larger organization (Antoncic and Hisrich, 2003) or as applying the entrepreneurial principals in corporate environment. Pinchot (1985) calls an entrepreneur a „person who focuses on innovation and creativity and who transforms a dream or an idea into a profitable venture by operating within the organizational environment”. Burgelman (1983) describes intrapreneurship as, “the process whereby the firms engage in diversification through internal development. Such diversification requires new resource combinations to extend the firm's activities in areas unrelated, or marginally related, to its current domain of competence”. In literature we can find several terms which have same meaning – those are intrapreneurship (Kuratko, 1990), corporate (or internal) entrepreneurship (Schollhammer, 1982), corporate ventures (Ellis and Taylor, 1987) and new ventures (Roberts, 1980).

The main reason why intrapreneurship has been gaining more attention is the rising uncertainty in both external business environment and internal organizational structure. Entrepreneurship can be sometimes perceived with certain level of skepticism when speaking about its application of to large and established organizations (Morris and Kuratko, 2002). Because many managers of large corporations have no previous own entrepreneurial experience, they can feel entrepreneurship belong to completely different category and should not be connected to their business. Researches prove that large organizations often lack flexibility in their culture and they are not able to provide environment rewarding autonomy and development opportunities which many talented individuals are looking for (Morse, 1986).

When speaking about talents, researches also show that intrapreneurial environment attracts highly skilled and innovative people who are interested in applying their entrepreneurial skills for a benefit of their employee. They might not be interested in establishing their own business so they search for a relatively safe corporate environment. By incorporating a concept of intrapreneurship into corporate culture, organization gains an improved potential for creativity and innovation which is connected directly to its overall competitiveness on a market (Kuratko and Montagno, 1989). According to Åmo and Kolvereid, (2005) intrapreneurs not only develop and apply their creative and innovative skills but they also share more likely their know-how. They are also more capable in important core competences like decision-making, goal setting or teamwork.

In last decade getting and keeping a competitive advantage is becoming more difficult even for large and well-established corporations. Respected organizations of high reputation can't survive without innovation and contact mutual interaction with their customers. It is not even enough to react to customer needs those days – there are thousands companies on the market that are trying to read their customers’ minds even before they express their needs. Therefore even the industry giants are implementing intrapreneurial cultures to be more flexible and fits the unpredictable and unstable market. This is a case of GE (General Electrics) or IBM just to name few. With increasing demand for customization size and volume is not enough to keep competitive. Corporations need to search other ways to stay in touch with their customers which loyalty and preference is less and less stable.

Despite the fact that intrapreneurship and corporate entrepreneurship have been researched intensively for over three decades, not much research has been done in the Czech Republic covering this topic. In fact, the word “intrapreneurship” and its Czech translation are both still very new to local business dictionary and not widespread among Czech executives.

### 1.1.2. Entrepreneurship and intrapreneurship – similarities and differences

There are many similarities between intrapreneurship and entrepreneurship. The following descriptions of those two key terms were taken from the work of R.W.Y. Kao. The entrepreneur is defined as “a person who undertakes a wealth-creating and value-adding process, through incubating ideas, assembling resources, and making things happens” (Kao, 1995). Entrepreneurship is defined as “the process of doing something new (creative) and something different (innovative) for the purpose of creating wealth for the individual and adding value to society” (Kao, 1995). The intrapreneur is defined as a person who plays an entrepreneurial role in an organization. According to Morris and Kuratko both entrepreneur and intrapreneur show adaptability, flexibility, speed, aggressiveness and innovativeness.

Intrapreneurs are also characterized as people who are having commercial insight, who show awareness and understanding of the market and business environment. They are self-motivated, creative and innovative, persistent, result oriented with good people skills. Table 1 summarizes the similarities and differences between entrepreneurship and intrapreneurship.

*Table 1: Entrepreneurship and intrapreneurship - similarities and differences*

Similarities	Differences
<ul style="list-style-type: none"> <li>▪ Both involve opportunity recognition and definition.</li> <li>▪ Both require a unique business concept that takes the form of a product, process, or service.</li> <li>▪ Both are driven by an individual champion who works with a team to bring the concept to fruition.</li> <li>▪ Both require that the entrepreneur be able to balance vision with managerial skill, passion with pragmatism, and pro-activeness with patience.</li> <li>▪ Both involve concepts that are most vulnerable in the formative stage, and that require adaptation over time.</li> <li>▪ Both entail a window of opportunity within which the concept can be successfully capitalized upon.</li> <li>▪ Both are predicated on value creation and accountability to a customer.</li> <li>▪ Both entail risk and require risk management strategies.</li> <li>▪ Both require the entrepreneur to develop creative strategies for leveraging resources.</li> <li>▪ Both involve significant ambiguity.</li> <li>▪ Both require harvesting strategies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In start-up entrepreneurship, the entrepreneur takes the risk in intrapreneurship and the company takes the risk other than career-related risk.</li> <li>▪ In start-up the individual entrepreneur owns the concept and business in intrapreneurship; the company typically owns the concept and intellectual rights with the individual entrepreneur having little or no equity in the venture at all.</li> <li>▪ In a start-up potential rewards for the individual entrepreneur are theoretically unlimited where in intrapreneurship an organizational structure is in place to limit rewards/compensation to the entrepreneur/employee.</li> <li>▪ In a start-up venture, one strategic gaffe could mean instant failure; in intrapreneurship the organization has more flexibility for management errors.</li> <li>▪ In a start-up the entrepreneur is subject or more susceptible to outside influences; in intrapreneurship the organization is more insulated from outside forces or influence.</li> </ul>

Source: Morris and Kuratko, 2002

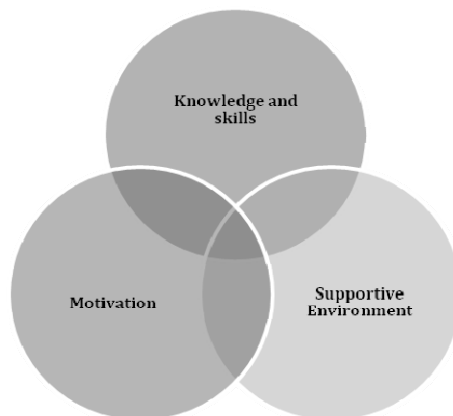
## 1.2. CONDITIONS FOR GREAT ENTREPRENEURIAL PERFORMANCE

Several components are contributing to successful entrepreneurial or intrapreneurial performance. They can be divided into three main areas:

- entrepreneurial knowledge and skills
- entrepreneurial motivation
- entrepreneurial environment

In the ideal case, all three components are present in the workplace – the best area for great entrepreneurship or intrapreneurship performance is where all three components meet as the Figure 1 describes.

*Figure 1: Conditions for great entrepreneurial performance*



### 1.2.1. Entrepreneurial knowledge and skills

Great performance cannot happen without proper skills and knowledge in place. Knowing well the particular business and being able to apply this knowledge is vital for success. For entrepreneurs this knowledge and skills set is a combination of two areas:

- a) knowledge and skills of entrepreneurship and management (for example managing a travel agency)
- b) knowledge and skills of particular business (for example knowledge and overview of tourism and hospitality business, knowledge and experience of particular touristic destinations, etc.)

### 1.2.2. Entrepreneurial motivation

People need to be motivated to perform their knowledge and skills for achieving great results. Most managers and business owners find internal motivation being a critical issue for company success because this is the element which can be influenced from outside to only certain level. Motivated and engaged employees are making a real difference mainly in the areas of business that deal directly with customer. This is becoming obvious especially those days when products and services can be quickly copied – but people's attitude and relationship cannot.

### 1.2.3. Entrepreneurial environment

Supporting environment is the last component of great entrepreneurial performance. Entrepreneurs can get a lot of support from their government by creating policies and procedures, which can make running business easier and less risky. Each year the World Bank updates its long-term research called "Doing business", which measures ten core criteria of supporting business environment. In 2012, over 180 countries participated in the research. It

provides interesting comparison how different countries are helping their small and medium businesses to compete in global market economy.

For intrapreneurs the most important components of supportive environment is their company culture, their systems and processes and particularly the support of a sponsor, usually someone from top management who is able to protect new intrapreneurial ventures until they can bring some interesting results.

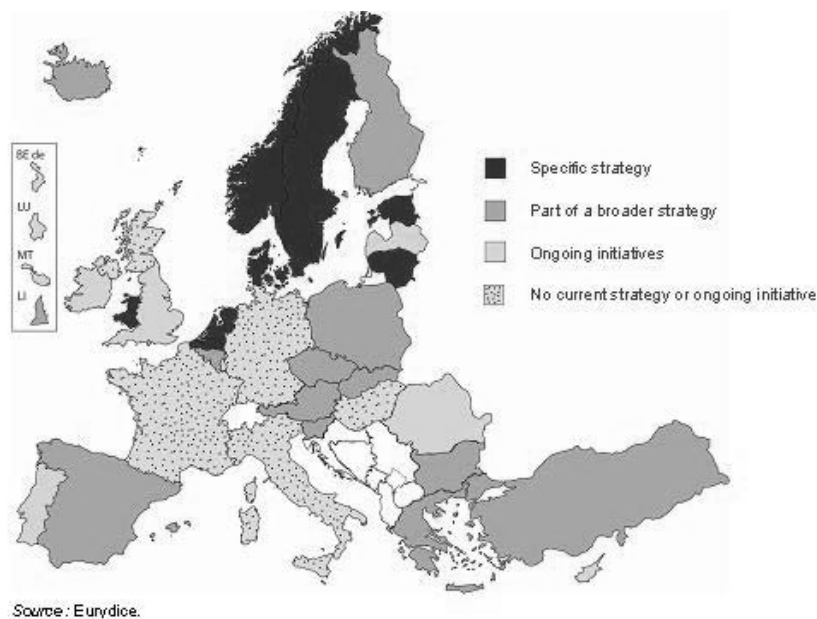
### 1.3. NEEDS IN ENTREPRENEURSHIP DEVELOPMENT

World needs more entrepreneurs and Europe needs them especially. Czech Republic is not an exception. In the global market environment with strengthening competition the need for innovation is present and demand for people with entrepreneurial competencies is increasing. Besides traditional entrepreneurs who can be found mainly in small and medium business environment, there could be noticed significantly increasing demand for intrapreneurs from large corporations. Increasing focus on talent management is one of the signs, which confirms this trend. Surveys suggest that profiles and core competencies of talents in many corporations are very similar to profiles and characteristics of intrapreneurs.

## 2. DEVELOPING AND EDUCATING FUTURE ENTREPRENEURS

European commission researched in 2011 entrepreneurship development in 31 countries and in 5 regions. The overall situation is shown at Figure 2 – despite the agreement of entrepreneurship development importance, only several countries – mostly from northern part of continental Europe - have in place a specific strategy. It is interesting to notice that large countries which are considered being leaders of EU economy, like Germany and France, have no strategy in place nor ongoing initiatives for their development. The Czech Republic has entrepreneurship development incorporated in its documents regarding country competitive strategy but this is not specifically described as a strategy.

*Figure 2: Entrepreneurship development support in EU countries*



Source: Eurydice, 2011

About 2/3 of participating countries confirm they incorporate some key entrepreneurial skills in the primary education despite the fact that none of the countries has introduced a specific

subject on entrepreneurship at this age stage. High school education level brings mandatory subjects as economy and social science where entrepreneurship is mentioned in over half of the participating countries. Two countries (Latvia and Romania) offer entrepreneurship as specific subject. Four countries (Latvia, Romania, Lichtenstein and Norway) have identified clear practical framework for development of entrepreneurial competencies.

## **2.1. CURRENT SYSTEM OF EDUCATION AND DEVELOPMENT**

As the demand for people with well-developed entrepreneurial competencies is rising in both SME's and corporate world, it created a natural demand for education and development of both future entrepreneur and intrapreneurs. Today's college and university students, called Millennials, grew up in very different environment to previous generations. They are used to learn from different sources and they are comfortable with computers, smart phones or tablets often more than pen and paper.

Students interested in studying entrepreneurship are usually those with a significant potential of entrepreneurial competencies development. Many of those students have previous work experience often from family business environment; some of them are founders and owners of their own businesses. I surveyed 154 of those young people and they express in their feedbacks the following needs for their education:

- urgent need for more practical education (f. e. using real case studies)
- urgent need for more interactive and “hand-on” style of education
- need for working on real projects where newly gained knowledge could be immediately transformed
- need to use more diverse forms of learning

Those finding confirm the key need characteristics of most tertiary student today in the Czech Republic, but students of entrepreneurship find them much more critical. It can have a fatal influence on their business projects and determine their success.

## **2.2. CHALLENGES IN ENTREPREPENURIAL EDUCATION**

To adapt the existing entrepreneurial education for modern business environment, universities and colleges face challenges which the do not have previous experience with. Those challenges can be divided into three main categories:

- challenges for educators
- challenges for students
- challenges for system

Each category of challenges can be represented by several key questions, which should be researched in depth to obtain inspiration for further entrepreneurship education development.

### **2.2.1. Challenges for educators**

Key questions:

- Do educators understand the changing business environment and future market needs?
- Are educators well equipped (both with competencies and with tools) for being able to respond to those needs?
- Can educators adapt their existing portfolio to those needs?

It is important that educators of entrepreneurship are in touch with the “real world” environment. Entrepreneurship is extremely practical discipline so it requires more practical education. Co-operation with SMEs or larger businesses is supporting learning process and students usually enjoy being in contact with existing business owners or managers. Some business schools find this aspect so important that they require their educators to have some

previous own business experience. This is not a case in the Czech Republic however non-academic presenters are invited as guest speakers more frequently now than five years ago. New techniques and new media need to be implemented in current education programs in order to truly support development of entrepreneurial competencies. This requires educators to adapt and develop new competencies as well. The positive thing is that more university professors and assistants already have found innovative ways to bring new media into the classrooms however it is still very much dependent of their personal passion and enthusiasm for new technologies. McLoughlin and Lee (2010) identify in their report specific affordances of social media – connections and social rapport, collaboration (information finding and sharing), learner-generated content, and accumulation of knowledge and information – that contribute to the cognitive development of students.

In 2011 first class of students of entrepreneurship at our university was able to use private social network provided by external IT company. They were able to communicate among others in between classes, to share resources and to recommend interesting sources of information. As a lecturer I noticed significant increase in preparation for classes and students also mentioned this as a benefit in their final evaluation. We continue with this in 2012 however are using different social network more suitable for education. Some of the changes do not have to be too sophisticated. Students must do a lot of writing during semesters and the experience with writing team essays was not satisfactory. Students were not working as a team properly, they tended to split the work and write individually. As teamwork is perceived as one of the most important competencies in the business world, we made recently an experiment – students were asked to deliver the teamwork topic in the form of video. They had to organize the whole project from script writing, organizing equipment, shooting the video, cutting it and posting the final result on Youtube. The outcomes exceeded expectations – students worked on their assignment with enthusiasm and they were able to deliver very good quality videos. The teamwork was also performed to much higher level. Students indicated the following benefits from this work:

- interesting and exciting way of learning (they had to research the topic and share their learning before starting to work on the video)
- fun (they enjoyed working together on this project despite the fact they spent about 25-30 hours in average on it)
- result they were proudly presenting not just to their fellow students but also to their relatives and friends outside their classes
- learning new useful skills which most of them want to further develop

The importance of developing new approaches to teaching entrepreneurship is being recognized – the new style of teaching future entrepreneurs needs to be more co-operative and creative using different sources of information and bridging the gap between academic theory and real world experience.

### **2.2.2. Challenges for students**

Key questions:

- Are tertiary students generally able to work effectively with their inner motivation towards own learning?
- Are students of entrepreneurship really interested in becoming entrepreneurs?
- Are students of entrepreneurship able and willing to actively participate on classes design and bring their own case studies and questions?
- Can students of entrepreneurship share information and knowledge and work in teams despite the individual evaluation system?

To be able to succeed in the real world of entrepreneurship, students needs to learn broader and more complex set of competencies. They need to participate in education more

actively and besides gaining knowledge to be also able to develop a portfolio of entrepreneurial skills and attitudes. This requires significant change in a way how students contribute to classes, interact with educators and among themselves. The skills of using of new tools like social media are also required, however researches show that this is less significant challenge for students than finding a proactive attitude towards learning. Blaschke, Porto, and Kurtz (2010), in their recent research confirm that, from a student perspective, the active use of social media may increase interaction levels (student-student, student-instructor, and student-content) and promote the development of cognitive and meta-cognitive learning skills, such as reflection, critical thinking, construction of knowledge, and understanding of one's individual learning process.

In our course of entrepreneurship students are expected to prepare for classes to be able to work on specific cases in small groups. They are encouraged to bring their own questions and cases into the classes where they meet both educators and real entrepreneurs. The aim here is to shift their perception of learning from "What is the minimum I need to pass" to "What else I can learn from those people". One semester does not usually provide enough time for this complete attitude change but we have good results from the series of entrepreneurial courses, which are taught as a Entrepreneurship and SME management specialization.

The main question is how much students are willing to contribute to teams if the final evaluation is mostly based on individual performance. Researches of some respected experts in education like S. Mitra or K. Robinson confirm that students gain most learning from open collaborating in small groups. Unfortunately, most performance evaluation systems – both in schools and corporations – are based on the individual performance. This can lead to inner competition decreasing the willingness to share important information.

### **2.2.3. Challenges for system**

Key questions:

- How well can the existing education system prepare entrepreneurs for real world challenges?
- Can existing system incorporate tools, which are useful and appealing to students?
- What could engage students more in their studies and make their more active in learning?
- Are appropriate methods of assessment in place to measure real outcomes?

The system of educating future entrepreneurs also needs to be adapted to new requirements from the market. The changes are required in both content and form.

The first challenge comes with the content. Business environment is changing very fast and five years can bring revolutionary changes. If master level studies take three years in the Czech Republic, it means that about half of the knowledge, which students learnt during their first year of studies, can be obsolete when they finish. This represents a critical issue especially when final examination is based on knowledge and must be designed in line with original curriculum. Most students of entrepreneurship in the Czech Republic in their last year of master studies are already having job or are running their own business. They can see the differences between existing markets and education curriculum and it decreases their motivation to learn.

The form of learning is also important especially for student motivation. Although educational technologies have been usually slow to catch up market development, some changes have already started to be implemented. For example according to the Pearson Social Media in Higher Education Survey (2010), over 80% of college faculty is using social media, with 52% of faculty using social media in the classroom. This research was using a sample of 939 individuals from US higher education institutions. This looks like a very good result, however the survey points out that the use of social media is primarily passive. Only about

10% of faculty uses social media in an active way. I believe that those numbers could be similar or even lower in the Czech Republic. The absence of appropriate system and guidelines together with long-term lack of adequate investment in education limits usage of modern ICT tools in supporting entrepreneurial development.

Probably the most challenging part of this category is the learning outcome assessment. They are usually designed in a way they can measure knowledge but it is the knowledge, which is changing the most in the current business environment. Especially in entrepreneurship education it would be more interesting to assess students based on case study work. But those assessments are usually lacking objective measurements and can be also very time consuming for educators to evaluate.

### 3. HEUTAGOGY AND PERSONAL DEVELOPMENT

The changes we have been witnessing in the last decade in HR development are revolutionary. Since we live in a society, which has made a high technical progress, and information is now within a reach for most population in most of the European countries, advanced learning according to many education professionals should be more self-determined: it means that the student determines what and how learning should take place.

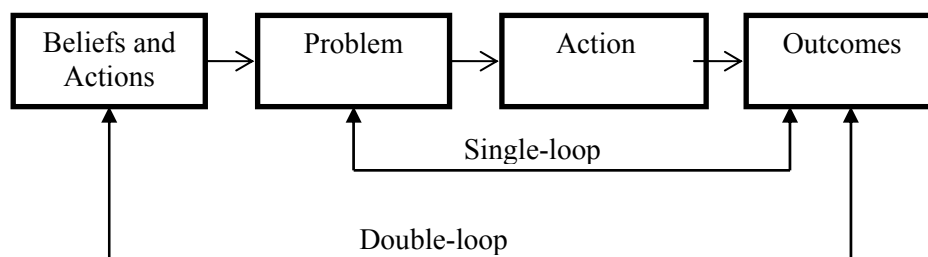
#### 3.1. HEUTAGOGY, ITS PRINCIPLES AND BENEFITS

According to Hase (2002) heutagogical approach to education recognizes the need for flexibility in the learning process where the educator provides resources but the learner designs the curriculum, not just the learning process, by negotiating the learning. The focus is mainly on development of individual capability, individualized learning and independent learning. Ford (1997) argues that learning should be more “knowledge sharing” rather than “knowledge hoarding”. Hase confirms that heutagogy can have a significant potential future of learning when knowing how to learn will be a fundamental skill given the pace of innovation and the changing structure of communities and workplaces.

##### 3.1.1. Heutagogy definition

With the term derived from the Greek word for “self”; with “agogos” meaning “leading” and based on theories of self-determined learning, the term heutagogy was coined by Hase and Kenyon in the late 1990’s. Heutagogy represents the concept of truly self-determined learning. Recent researches suggest that heutagogy could bring appropriate forms of learning to the needs of current students of entrepreneurship. Heutagogy can be also viewed as a study of self-determined learning. Heutagogy works with so called double loop learning as Figure 3 describes.

*Figure 3: Double-loop learning in heutagogy*



Source: Eberle and Childress, 2005, as shown in Eberle, 2009



Heutagogy involves beliefs in the learning process, which helps to motivate learners to get better learning outcomes. It is important what is being learnt as well as how it is being learnt. This represents one of the key long lasting impacts of heutagogy – creating a positive attitude towards learning by positive experience of own capability.

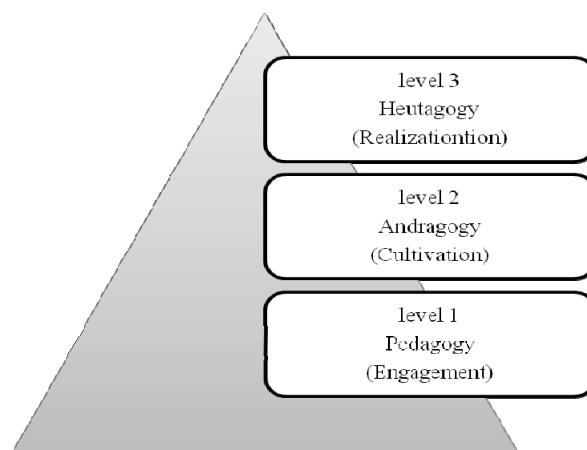
### 3.1.2. Heutagogy and andragogy – similarities and differences

So how is heutagogy connected to andragogy and how do they differ? Andragogy is self-directed learning methodology used in adult learning process. According to Knowles (1978) andragogy can be described by the following characteristics:

- learner control and self-responsibility in learning
- learner definition of learning objectives in relation to their relevance to the learner
- a problem-solving approach to learning
- self-directedness in how to learn
- intrinsic learner motivation
- incorporation of the learner experience

In an andragogical approach adult students play active role in their learning process based on their learning needs. Knowles (1975) defined this way of learning as a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. Educators are playing a role of mentors in andragogical process – they design a training curriculum, show the students how to find the relevant information and provide a link between theory and real case study experience. They establish learning objectives and supervise students in their learning path. Students are responsible for their own learning and for its application in their working environment. Heutagogy evolved from andragogy as its progression. The progression is shown in Figure 4.

*Figure 4: Progression from pedagogy to andragogy and from andragogy to heutagogy*



Source: Canning, 2010

Canning (2010) argues that more mature learners require fewer instructions and need more autonomy. If this condition is fulfilled, their learning can become more self-directed and more effective.

It is obvious that the level 3 requires more mature approach to learning from students in order to gain autonomy and become more independent learner.

Generally in heutagogy, students play more active role in setting the learning process, they are designing and developing the map of learning, from curriculum to assessment (Hase, 2009). According to Hase (2009) heutagogy emphasizes development of capabilities in

addition to competencies (andragogy). Table 2 brings a summary of comparing andragogy and heutagogy.

*Table 2: Comparing andragogy and heutagogy*

<b>Andragogy (Self-directed)</b>	▶	<b>Heutagogy (Self-determined)</b>
Single-loop learning	▶	Double-loop learning
Competencies development	▶	Capabilities development
Linear design and learning approach	▶	Non-linear design and learning approach
Instructor-learner directed	▶	Learner-directed
Getting students to learn (content)	▶	Getting students to understand how they learn (process)

Source: Hase (2009)

### **3.1.3. Benefits of using heutagogy in developing entrepreneurs**

Based on existing researches it is believed that heutagogical approach can increase student motivation in learning and develop good habits for lifelong learning. This is especially important for entrepreneurs who are working in constantly changing environment – motivation to learn new things is vital to their business sustainability.

Many discoveries about motivation to learn were made by Rogers (1969). He suggests that people want to learn and have a natural inclination to do so throughout their life. He based his student-centered approach on five key hypotheses:

- We cannot teach another person directly: we can only facilitate learning;
- People learn significantly only those things that they perceive as being involved in the maintenance or enhancement of the structure of self;
- Experience which if assimilated would involve a change in the organization of self tends to be resisted through denial or distortion of symbolization, and the structure and organization of self appear to become more rigid under threat;
- Experience which is perceived as inconsistent with the self can only be assimilated if the current organization of self is relaxed and expanded to include it; and
- The educational system, which most effectively promotes significant learning, is one in which threat to the self, as learner, is reduced to a minimum.

Being able to learn according to heutagogical principles would have also an impact on corporations, HR work in management and employee development area specifically. The self-determined approach would have a positive effect on training effectiveness that would result in cost savings in training and development budget.

## **3.2. APPLICATION OF HEUTAGOGY IN TERTIARY EDUCATION**

Research on motivation combined with heutagogical theory would suggest that there is a need to develop an understanding of how to use and develop existing potential of employees through self-determined learning (Graves, 1993, Hase 2002). According to Hase (2002) today's world is no place for the inflexible, the unprepared, and the ostrich with head in sand, and this applies to organizations as well as individuals. He believes that capable people are more likely to be able to deal effectively with the turbulent environment in which they live by possessing a capacity centered on self-efficacy, knowing how to learn, creativity, the ability to use competencies in novel as well as familiar situations and working with others. Therefore, heutagogy should be applied soon in your people's life and it seems that tertiary education could take the role of it.

### **3.2.1. Experience from Australasia**

Hase (2009) argues that web 2.0 and social media play a significant role in generating new discussions about heutagogy within higher education. He believes that web 2.0 design supports a

heutagogical approach, one that allows learners to direct and determine their learning path and enables them to take an active rather than passive role in their learning experience. Current students were raised in the environments where they have experienced dealing with new technologies from their very young age. Most of them are already capable using social media and web or mobile applications while entering tertiary education institutions. Kuit and Fells (2010) point out that this could help learners to personalize their learning paths in the way they desire.

Australian experience confirms that heutagogy develops capabilities and competencies at the same time. While competencies are usually described as proven abilities in the area of knowledge or skills, capability can be defined according to Cairns (2000) as the ability to take appropriate and effective action to formulate and solve problems in both familiar and unfamiliar and changing settings.

Hase and Kenyon (2000) defined from their research three key characteristics for developing competent and capable learners:

- self-efficacy, in knowing how to learn and continuously reflect on the learning process
- communication and teamwork skills, working well with others and being openly communicative
- creativity, particularly in applying competencies to new and unfamiliar situations and by being adaptable and flexible in approach

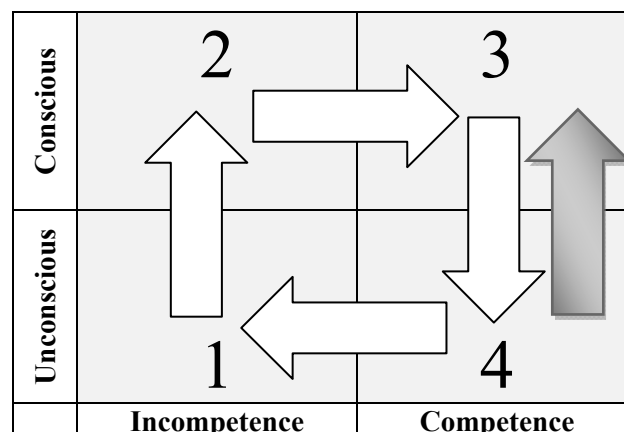
They stress the point when learners are capable, skills and knowledge can be reproduced also in new and completely unfamiliar situations. This is the fundamental of another phenomenon recently used in many organizations for people development and it is personal or business coaching.

However, Hase reminds that when capability can be an extension of one's own competence, without competency there cannot be capability. This is confirmed by practice when coaching cannot be successfully applied when people are not competent – coaching can only use existing potential (set of knowledge and skills) to make it more effective.

### 3.2.2. Coaching as key heutagogical tool

Heutagogy was first introduced in 1999 (Hase and Kenyon). Established well in Australia and New Zealand, heutagogy is still relatively unknown in Central and Eastern Europe, in the Czech Republic respectively. Based on this fact its implementation can be considered as relatively difficult in institutions providing official tertiary education when most of the classes are still being taught in the form of giving lectures. Also Czech students generally are showing less proactivity and engagement in additional work comparing to my experience from teaching in New Zealand. On the other hand one element of heutagogy is recently booming in the Czech republic and is in high demand both from companies and individuals, students included. This is coaching, a specific way of development dealing with human potential and motivation as it defined by J. Whitmore. The development process can happen via two ways as shown in Figure 5.

*Figure 5 – Coaching as a part of heutagogical system*



The first traditional way comes in clock-wise direction and can be described as traditional training no matter what the learning style of the individual is. When learning happens, the skill appears in the third quadrant of conscious competence. After some practicing it becomes automatic and moves to fourth quadrant of unconscious competence. In the world of constant changes individuals must adapt to the changing environment more frequently and repeat the training process more often. Or they can use a different method of applying existing knowledge and skills potential to changed conditions. This is surprisingly powerful way of learning and development which is appealing to large group of people all around the world. Open questions are used to support this process of learning, which is known as coaching. Coaching has been recently in high demand in the business world because besides solving a particular problem it develops also many core competencies non-directly. Those can be:

- goal setting
- time and priority management
- self-management
- self-motivation
- effective usage of resources
- creative thinking
- planning and progress monitoring
- positive approach to changes
- networking
- etc.

Learners are developing those skills when they need them as training and coaching can be provided simultaneously. Most of those competencies could be described as typical entrepreneurial competencies, which confirms coaching to be a potential way of developing entrepreneurs. Therefore coaching could also become a useful heutagogical tool and entry initiative for implementing heutagogical principles in tertiary education programs. In the Czech Republic coaching has become very popular way of management development especially after 2005. Most of the large corporations are currently using external coaches for their executives with the average length of coaching programs consisting of 6-12 months (Barton, 2012). Based on its common measurable successful outcomes many of those corporations are lately investing into their internal coaches development to be able to introduce coaching to wider target group. Coaching culture is becoming a desired target.

Researches confirm (Hay, 2002) that using coaching techniques in adult development brings behavioural changes and changes in individual motivation. Based on Hay research in corporations coaching is mainly used for:

- |  |     |
|--|-----|
| ▪ Enhancing interpersonal skills         | 35% |
| ▪ Enhancing management skills            | 18% |
| ▪ Enhancing business agility/credibility | 15% |
| ▪ Enhancing leadership skills            | 14% |
| ▪ Fostering personal growth              | 12% |

From the data above it can be indicated that coaching in corporations is mainly used for skills development but it deals with motivation and attitudes as well. In tertiary institutions in Czech Republic coaching has been recently introduced as a teaching method and it has been gaining high level of attention from students. The results of its implementation into first programs are suggesting that using coaching brings the following benefits:

- Students say they are able to focus better on the discussed topics and gain more knowledge out of their learning
- Students evaluate themselves being more motivated and disciplined with time management
- Students improve soft skills while learning (especially interpersonal skills)

- Learning happens through many resources and students are actively involved in their search, it is not just limited to knowledge transfer from educator to students
- Sharing is a key component of learning process so team or group coaching can be applied successfully

### **3.2.3. Challenges in application**

Heutagogy can be great approach in educating entrepreneurs when they are motivated and mature – when they can work independently and share information and collaborate at the same time. This can be a challenge for existing tertiary education systems. The motivation of students to study entrepreneurship can be different and this can have an effect on their acceptance of heutagogical principles. For example in University of Economics in Prague there is no specific selection system in place for participating in classes of entrepreneurship, it work on “first comes” bases. According to Canning and Callan (2010) less mature learners require more instructor guidance and course scaffolding so for them heutagogical approach is not suitable.

As Peters describes (2004), a more self-directed and self-determined approach to learning is needed to ensure a positive approach to so much needed lifelong learning. It gets obvious that pedagogical and even andragogical educational methods are no longer fully sufficient to prepare students for entering today’s ever changing job market. Young people – both entrepreneurs and employees – are going to need much more broader set of competencies to succeed on market where competition is becoming more global every day.

There are recently many discussions around using social media in education. Some of the latest researches prove that social media have a positive effect on self-determined learning. It was also confirmed in our classes that being connected via social networking website students share more information and are able to collaborate more effectively. Students who were actively using the social networking website were generally more engaged in learning process and their results were usually above the average score in a class. Blaschke, Porto and Kurtz (2010) argue that using social media in learning process helps establish so called learner-generated content and improve some of the important cognitive skills. They propose that this active way of participating in learning process brings more effective and long-lasting results than passive way of learning. This was proved in our classes as well during the final testing – students remembered examples and stories, which were presented by their classmates and also were able to research similar examples on their own outside of classes. This supports their understanding and enables the application of learning into different environments.

## **4. CONCLUSIONS AND FURTHER RESEARCH**

According to Hase, heutagogy is seen primarily applicable to vocational education and tailor-made in-company training. Universities might find some challenges in applying heutagogy, especially in terms of learning outcomes assessment. The principles of heutagogy seek to democratize the assessment process by allowing it to be driven by the realities of the “real world”. But even then heutagogy represents unique and modern approach to adult education and could bring some revolutionary principles into tertiary education. This would also increase the connection between official education of students and the application of gained competencies in practice later on which is in high demand today.

Heutagogy seems to be relevant especially for educating young entrepreneurs as it can influence and develops many entrepreneurial competencies like proactivity, opportunity identification and evaluation, finding and keeping inner motivation, dealing with resources effectively, setting up priorities etc.

The further research is planned especially in applying heutagogical principles (like coaching and using social media) in our entrepreneurship education courses. So far, we have measured the immediate outcomes (after semester) but it would also be interesting to research the long lasting effect (2 years after completing the course). For this purpose an alumni group has been formed in LinkedIn where we will start to collect our data in 2013.

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*Csaba Bálint Illés, Anna Dunay, Tímea Kozma*

### 3.5 DILEMMAS OF LABOUR MARKET NEEDS AND HIGHER EDUCATION: THE HUNGARIAN CASE STUDY

**Summary:** What should the students be prepared for during university studies, and how the higher educational institutions should take into consideration the need of companies – these questions are returning issues in Hungary. As a result of technical development and globalization, the structure on the economy changes continuously. New businesses start, the importance of some of them improves or decreases, the actuality of different disciplines may be changed. Higher education is similar to a large aircraft carrier with a serious military potential, which cannot change its position immediately, and the impacts of the changes may be detected much later. In European higher education, problems started by the Bologna Process, which although opened new dimensions for renewal, but also required new 'navigation methods' or in some cases 'new ships'. Moreover, an important question may arise from this new system, namely, what is the role of higher education in these changing economic and social circumstances, and how can it meet these new requirements? How can be higher education adjusted to the changing needs of labour market, how much it should be adjusted to the practical needs of the potential employers – in this paper we try to find the answer for these questions. In addition, we show a practice-oriented Business Administration and Management BA course, with well-functioning connections with the labour market as a best practice; and we try to mark the possible contacts between higher education and the companies, to show the weaknesses, to find their reasons and to search for their solutions.

**Keywords:** higher education, educational structure, labour market

## 1. INTRODUCTION

A key element of economic growth and competitiveness of a country is to align the needs of the labour market and the companies with the structure of the educational system. In Hungary, one of the most problematic issues is that the graduates can hardly use their theoretical knowledge in their new working places, where mostly the practical knowledge is needed. What should the students be prepared for during university studies, and how the higher educational institutions should take into consideration the need of companies it means a permanent question for the involved parties.

Nowadays, the changes in the structure of the economy, the range of the products and their functions have been much accelerated in some industries, which effects may radiate into other industries. As a result of the explosive development in communication and IT, virtual enterprises may be developed; different operations and activities may be transacted via e-channels. Globalization and capital flow has affected the birth of new industries; the role of others has changed. In this situation, higher education is similar to a large aircraft carrier with a serious military potential, which cannot change its position immediately, and the impacts of the changes may be detected much later. Higher education should have to respond these changes immediately, but it is nearly impossible. Even if its reaction is immediate, its effects will appear delayed. The spread of new ideas and new methods will need longer periods.

Newby (2003) highlighted another important issue, namely that the most significant changes over the past years may be described by the movement from an elite to a mass system of higher education. The change may be measured well in terms of increasing student numbers.

In the past decade, a significant restructuring process could also be experienced in the training fields of higher education. While in the 1990ies only 10% of the students learned at

economic courses, nowadays the number of students at economic field increased nine times, which represents 23%. Similar to the domestic data, the same process can be observed in OECD countries, where the students' interest has the greatest share in economic subjects, law and social sciences.

An additional challenge – and a possibility for renewal – for European higher education was the introduction of the Bologna process. The Bologna Declaration set out the specified objectives: the adoption of a common framework of comparable degrees, the introduction of a three cycle system of higher education (bachelor/master/doctorate) relevant to the labour market, a compatible credit systems also covering lifelong learning activities, a European dimension in quality assurance, with comparable criteria and methods and the free mobility of students and teachers. Employability has been one of the main objectives of the Bologna Process from the very start. In the context of the Bologna Process, employability is defined as the ability to gain initial employment, to maintain employment, and to be able to move around within the labour market. (Bologna Declaration, 1999)

The changes affected not only the content of knowledge, but also educational methods. A very important question may arise from the new system, namely, what is the role of higher education in these changing economic and social circumstances, and how can it meet these new requirements? How can be higher education adjusted to the changing needs of labour market, how much it should be adjusted to the practical needs of the potential employers? Our conviction is that the institution should consider several different objectives either at BA/BSc or MA/MSc courses. One of its tasks is to provide students with up to date, competitive and relevant knowledge, secondly, it should teach learning abilities. The importance of this second issue has increased by our changing world.

In our paper, we examined this diversified topic, and tried to find the good examples and solutions to coordinate the specific needs of the labour market with the output issues of higher education.

## **2. PROBLEM ANALYSIS**

One can hardly answer the question about connections between labour market needs and the structure of higher education. How the higher educational system (knowledge, training, courses) should be adjusted to the needs and requirements of labour market? How far should the business sector connect to education through practical training? The question is still hard to be answer.

One of the possible solutions, when the universities should teach students only for learning practices, so the students will be able to learn new knowledge, to be self-taught in the lifelong learning process. The companies and chambers has formulated another extreme solution, namely, the main task of universities to provide the business sector by well-trained graduates with high quality practical knowledge, which they can use immediately in their workplaces. Of course, both sides have their own right aspects, but the permanent and rapid changes of our time will make the answers uncertain. For example, what to do with graduates who are specialized for a specific knowledge of a certain industry after a possible collapse of the industry is question? How can they knowledge survive? What kind of job do they apply?

The situation is complicated either by the unclear connections between the parties. Who is the customer of higher educational institutions? Who supports education? ... the state and/or government? ... and/or companies? ... and/or students or their families? The requirements of these customers are different in time, content and character.

It could be objected that higher education is primarily about developing advanced understandings of worthwhile subject matter, not about employability. It means that graduate employability is supported by teaching approaches that take this set of factors into account.



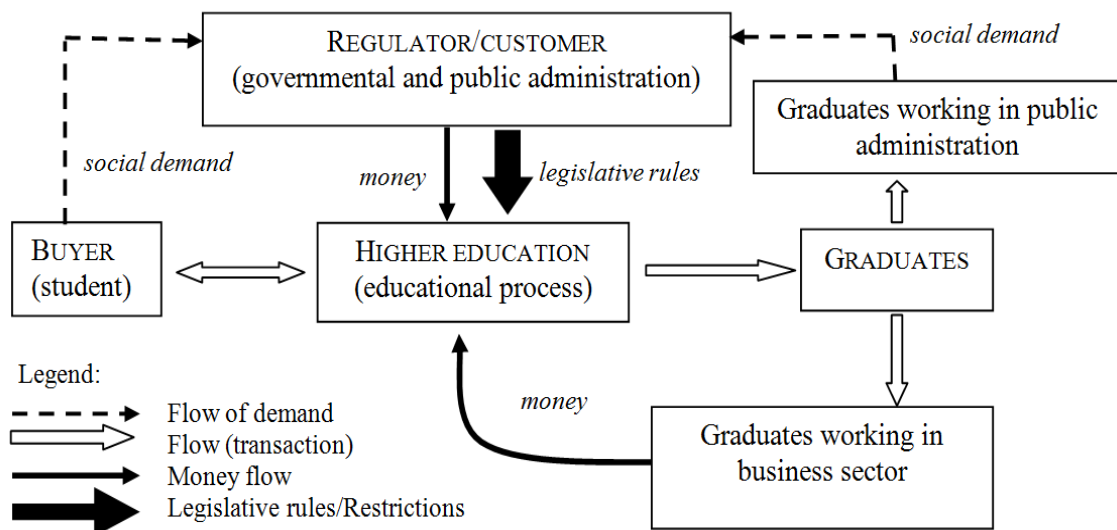
Whilst academic staff might reject employability as a curriculum goal, they are much more likely to accept that curriculum processes can improve the chances that students will gain in terms of employability. (Knight and Yorke, 2003)

According to Cichoblazinski (2010), there is a gap to be filled in between what a company can do and what the company must do for its competitiveness. This process needs acquiring new knowledge and needs an innovative behaviour of the educational sphere.

Human capital may be developed and improved through education and training process, but it may be improved through the connections between organizations (and of course business enterprises) and inside the organizations. This improvement has positive impacts on the individuals as well as on the functioning on the organization. (Bylok, 2010)

In the customer connection system (see Figure 1) the state or government acts as a regulator or a main customer, who determines the main inputs and outputs of education, as well as it controls its quality. The main interest of the state is to provide population with education and stimulate researches by as low supporting level as possible, which is financed from public money.

**Figure 1: Customer connections in higher education**



Source: own research

The question is how to align with the different needs of customers and the permanent changes of labour market. As a result of the scientific and technical progress different professions need higher knowledge level and skill, and need candidates with higher qualifications and more complex abilities.

English experts (Kippin and Wolf, 2010) differentiated the principles of the educational system in the UK according to the different educational stages. Each stage of education has a distinct institutional identity and a different set of underlying purposes, and there are different preconceptions about the value and/or benefits of education at each stage. Higher education has economic purposes (human capital development with immediate and measurable private and social returns) and human purposes (development of adults and their advancement because of learning). The mechanism of higher education may be under state provision for some groups of students, but non-state funded provision may also co-exist. The beneficiaries of higher education are students, workforce, employers and also wider society.

### 3. SITUATION ANALYSIS

In our globalised world, the technical progress has accelerated by the beginning of the 21<sup>st</sup> century. Globalization process, the revolution of info-communication, the successful innovation process has also changed. According to Vizi (2007) (only the well developed and innovative population will be competitive in the 21<sup>st</sup> century in Europe, as the introduction of new technologies or methods it may last for years. Slocinska (2010) emphasized, that in our time knowledge is the main factor which allows for new solutions, the recognition of appearing chances and threats and providing opportunities for development of enterprises. Knowledge is such a resource which does not have limits and which multiplies if shared and used. Those employees who manage their knowledge may be the most perfect component of the company's assets.

After the political transition, Hungarian economy changed for market economy, which brought several changes in the structure of different professions. New, entrepreneurial system was could be started, new technologies, methods, machineries and materials were introduced. The entrepreneurship brought new ideas and attitudes, the importance of business communication became a key issue for professionals. The quick technological development, the working possibilities abroad, the sharp competition in the market has basically changed the most requirements of the labour market. The employees should respond these changes by improving their knowledge, by lifelong learning methods. (Koszó et al., 2007)

According to Barakonyi (2004) higher education plays an increasingly important role in these circumstances, as in his opinion the key factor of competitiveness in the knowledge market is the quick and effective reaction to changes of the macro environment. Such training courses are needed and should be operated, which can satisfy the permanently changing needs of the labour market. The employee of our days shall be well trained and open-minded with very good abilities in problem solving. Barakonyi (2004) has defined the following three main trends of the present needs of labour market:

- The development of info-communication technology is so quick, that the obsolescence of knowledge is shorter, then the training period of a given course.
- The importance of the mobility of lecturers and students has increased by the globalization process; the labour market needs open-minded employees.
- The knowledge-based society needs graduated and highly qualified professionals.

Tímár (1996) has examined the connections between higher educational institutions and the labour market, and has stated that the most important determining factor of the well-operated labour market is the quality of the output of higher education. According to Magda (2007) basic (BA and BSc) courses shall be aligned with the requirements of the labour market by its high quality practical training methods, while the key issue of master (MA and MSc) courses is to provide with theoretical knowledge and to produce talented students for the research and development process.

Nevertheless, it should be stated, that some of the researchers and lecturers does not pay attention for improving the specialization and quality of master courses, or its adaptation for labour market needs and the possible ways of changing profession.

Company executives often complain that education is not adjusted to their requirements. This problem is quite extensive, as it is defined by both decision-makers and employers. In the employers' opinion, their requirements about the future employees and the needs of the labour market should be taken into consideration in higher education courses and other vocational courses. According to this party, the theoretical and practical knowledge and competences of the graduates is not in balance with the requirements, and the share and level of practical training at higher educational institutions is not appropriate.

The representatives of the chambers and the business sector have indicated for several years, that the number of training courses of the so-called trendy professions should be decreased. The government tries to meet these requirements by the change of state financed the number of students.

Several researches are connected to the examination of the job opportunities of graduates and the requirements for them. The labour market survey of Kiss (2008) confirmed that the practical knowledge became most important for the companies (language knowledge, practical competences, computer skills, etc), which is taught mostly at colleges. The theoretical knowledge given by the university courses has been widely criticised. The employers expect that the graduates would know how to work in an organization, what are the competences and knowledge for the given job, and what type of work he/she want to perform in the organization. The personal character and the working attitudes increased became issues that are more important. (Selmeczy, 2006) In addition to professional knowledge of the graduates, the importance of their competences for lifelong learning and their good language skills has also increased significantly. (Tóth and Várhalmi, 2010)

Researchers and professional experts define the oversupply of higher education in three groups. According to the first group, oversupply is harmful, and it is caused by the lack of state intervention. In the second groups' opinion, the increasing number of graduates does not make any problem, but there is a threat caused by the decreasing quality of the university degree. According to the third group, the further increase of the number of graduates is needed, and the leaving the professions has not considered a social problem in their point of view. (Tóth and Várhalmi, 2010)

According to Palócz (2001), the supply of the higher educational courses and the needs of the labour market differ fundamentally. In the structure of the labour market, there are conceptual differences, as the lack of practical knowledge is over-dimensioned by the employers, and it is explained by the defects of the output of higher education. It is not quite true, because higher education plays also an important role in higher-level vocational trainings, but it should be separated from basic and master courses, as their functions and objectives are very different. In the study of Selmeczy (2007) stated that the following requirements are preferred by the business sector in connection with the graduates: precise and independent work, good attitudes to teamwork, great workload, computer skills and theoretical knowledge of the given profession. However, most of these skills and knowledge may only develop through working experiences, which refers to a basic contradiction between the two parties. The connections between the business sector and the universities may be found at different levels, for example in the form of research support or company presentations and lectures, and are most typical for larger companies.

A special phenomenon of the labour market is that graduates with non-competitive degrees displace the employees with secondary education from those jobs, for which secondary education would be eligible, which is well represented by the employment data, as in the Hungarian labour market the share of unemployed with university or college degree is much lower. Best and medium-talented secondary school students are interested in BA and BSc courses, while poor-talented students prefer higher-level vocational training courses. The higher-level vocational training courses give more practical knowledge to the students, than universities and colleges, which can be well adapted to the needs of the business sector and the labour market.

On the contrary, the role of BA and BSc courses is to prepare students for lifelong learning abilities and to further studies at master courses, in order to be well-trained European citizens who can cope with the international requirements.

A present survey (INNOVA, 2011) has pointed on that the importance of the feedback has increased, i.e. the educational institutions ask for information about the needs of the business

sector, and they try to integrate these opinions into their educational system through the renewal of their curriculum and the development of new subjects.

In order to improve employment new educational background shall be established which helps the students to meet the real requirements of work in practice by new learning techniques and methods. The theoretical knowledge will improve the competences for lifelong learning, but in most of the jobs the practical knowledge is preferred, meanwhile, in practical training courses, the general knowledge level is lower and the improving of learning abilities is more or less missing.

The weakest link of the educational reform is the connections between education and business sector (Szabó, 2008), and according to her examinations the future employers cannot define concrete requirements in connection with the content of different training courses. The survey of Berde et al. (2006) resulted that 60% of the surveyed chambers and other professional organizations said that they had no appropriate information about the output quality of the new, two-phased educational system.

#### **4. INTRODUCTION OF A BEST PRACTICE – COOPERATION BETWEEN AN ECONOMIC BA COURSE AND THE BUSINESS SECTOR**

In this chapter, we introduce the *well-functioning connections* between the Business Administration and Management BA course of the Szent István University and the corporate sector and the direct ways of cooperation in the different fields of education. We also introduce the *results of our career tracking survey* carried out among the graduates of our Faculty. The results, which represent the opinion of our graduated students and their findings about the usefulness of our educational system, give us a direct feedback about our educational work.

The examined BA course is operated according to the principles of the Bologna system, which was introduced in the Hungarian higher education in 2006. The Business Administration and Management BA training course is the largest BA course of the Faculty with its approximately 900 students. When developing this course and adjusting to the Bologna system requirements, the intention of leaders of the course was to establish a practice-oriented training course with close cooperation with the corporate sector as well as to use the experiences of the former university system.

##### **4.1. THE DIRECT CONNECTIONS BETWEEN THE CORPORATE SECTOR AND THE EXAMINED BA COURSE IN THE FIELD OF EDUCATION**

The representatives of the corporate sector are connected to the Business Administration and Management BA course in many ways, for example as fellow lecturers, supervisors, members of final examination board, reviewers of theses, or the companies give a place for internship programmes or for research place of students' theses or works at students' scientific workshops.

In the field of several subjects, it is a general practice, that after giving the basic theoretical and practical knowledge, the representatives of the relevant business sector are invited for keeping lectures for the BA students. For example, in 'Project Management' subject, such professionals experts are invited to keep lectures who regularly manage large projects at their companies, having excellent theoretical and practical knowledge and experiences of this specific field and also has great performing skills. In the subject 'Basics of Insurance' our invited lecturer has managerial and practical skills who can perform the importance of insurances at company level, the management of insurance issues, and the significance of the management of the connections between the corporate sector and the

insurance companies to the students. In the subject 'Business Planning' the cooperation is performed at two levels. In the one hand, the students have to make teamwork presentations on their own business plans, which are reviewed not only by the lecturers, but also by professionals from the business sphere. On the other hand we have some invited lecturers for the specific lectures, for example on the bank lending aspects of business plan making the lecturer is a manager of a Hungarian bank, who can give the most up-to-date information in this topic. In 'Management of SMEs' subject, after the introduction of establishing and strategy making issues of SMEs and their life-cycle stages, a manager of a successful enterprise is invited to show the practical side of these development processes in the light of her/his own experiences. In 'Change Management' courses students have to make a case study on change management at a anonymous enterprise by the help of an external expert.

The involvement of the professionals of the corporate sector in higher education is very important, either for checking the usefulness and the actuality of the knowledge given by the lecturers, or as it gives an opportunity for the students to measure their own knowledge level, to meet the real practical importance of the topics they had to learn in theory. Moreover, it helps them to see these processes through an eye of a company. According to the results of surveying our students' opinion, they consider this kind of lectures given by of external experts very important and useful this.

In order to manage these lectures successfully, the topics of the lectures (the structure, the use of terms etc.) should be discussed between the supervisor of the subject, the lecturers and the external experts. In this way, the special topics performed by the experts will be not only interesting and practical for the students, but also they will fit into the curriculum of the given subject or course. Without this consultation process, the main objectives of this kind of education may be failed.

The students of the examined BA course may also get some experiences about the operation process of different enterprises in other different ways. In case of several subjects (Business Economics and Management, Logistics, Management of SMEs) they shall prepare compulsory or voluntary home essays, for which they shall visit a company and to collect data those are connected to the given subject. For example, in Business Economics and Management course, which is taught in the second semester, students shall compose a short essay about the ideal employee in economic fields by using the information collected from the job adverts in different economic papers. This work helps the students to meet the expectations of the labour market and the most important features of their future jobs even at the very beginning of their studies.

In the new-type Bologna system the students of the Business Administration and Management BA course shall accomplish a whole semester long (about 13-15 weeks) compulsory practical training programme (internship) in the 7<sup>th</sup> semester, where the work of the students is coordinated with close cooperation and the supervision of one of the lecturers and a representative of the given enterprise. The monitoring process of during the internship is very important from both sides, to check the students' knowledge, attitudes, and working abilities. The monitoring system of the internship has been established basing on the experiences of the former, university level system, in which the practical training programmes were limited only for summer holidays. According to these former experiences and the findings of the past three years of the BA system it may be stated that both the students and the external supervisors of the internship programme shall be prepared for these programmes, without providing appropriate information the training programmes may be unsuccessful or even failed.

The students are informed about the internship by a detailed written material, and in addition, the Head of the BA course keeps a lecture personally on the most important issues of the programme, about its requirements, objectives and conditions as well as the experiences of the

previous years. The basic criteria of the internship programme were established in accordance with the needs and requests of the companies.

After finishing the training programme, the students get an overall assessment of their internship programme. It is based upon two documents; the first is the compulsory summary of the internship programme written by the students, which is evaluated by one of the lecturers. The second is the report made by the external supervisors about their experiences and observations connected to the students' work.

During the time of the internship programme, there is a living connection between the university and the companies. The lecturer colleagues visit all companies and all students once during the programme. By these personal visits, we can get a direct feedback about the possible problems of the students, thus we can solve the problems in time. In these visits, the external supervisors of the internship programme are also asked about their additional requirements or their experiences, the working competences and the knowledge of the students in the form of a structured in-depth interview. The main findings of these visits show that the students make their jobs very seriously and diligently, according to their best knowledge.

The external supervisors at the different companies are generally very informative about the work of the students and they give several useful proposals and suggestions by which we can improve our educational work. After finishing the internship programme, the supervisors shall fill in an assessment sheet (by closed questions with a five-grade scale) and they are asked to fill in another assessment sheet by opened questions, to make an overall summary of their opinion about our students' work. Table 1 introduces the questions and the results of the assessment sheets in the past three years.

**Table 1: Assessment of the internship programs according to the external supervisors' opinion between 2009 and 2011**

Aspects of assessment of the students	2009 (n=150)	2010 (n=170)	2011 (n=152)
Working attitudes	4,77	4,81	4,82
Cooperation with colleagues	4,76	4,78	4,80
General quality of work	4,63	4,76	4,71
Adaptability	4,63	4,69	4,72
Evaluation of the work completed by the student	4,55	4,53	4,64
Relations with the company management	4,52	4,46	4,59
Oral communication skills	4,51	4,61	4,61
Written communication skills	4,48	4,59	4,63
General knowledge in connection with the work	4,41	4,40	4,50
Initiative skills	4,36	4,51	4,50
Communication with the customers	4,36	4,48	4,52
Self-sufficiency in decisions and working actions	4,24	4,38	4,37
Knowledge of the concerning industry	4,14	4,16	4,19
Language skills	3,76	4,05	3,83

Legend: 5-excellent, 4-good, 3-medium, 2-acceptable, 1-non-acceptable

Source: own research

The results of the assessment of the internship programmes (Table 1) show that the working attitude of the students, their cooperation with the colleagues, the quality of their work, their adaptability and oral communication skills were classified as excellent. The students' language skills, their information about the given industry, self-sufficiency in decision-making and working actions were considered medium or good by the external

supervisors. In the latter cases it should be remarked that the standard deviation of these values was very high. As it can be observed, the results of these assessments in most aspects have improved in the past years.

In summary, it can be stated, that companies are satisfied by the work of our students. Their knowledge about their future profession is good, and they can use this knowledge in practice as well. In the open questions some supervisors has remarked that at the very beginning of their internship programme some deficiencies could be observed in their specific knowledge, but the students looked after these problems. In some cases, the company has provided the students with specific practical information and techniques to compensate the lack of knowledge, or the students could get the practical skills during the internship. The experiences of the internship programmes confirm us that structure of the practice-oriented subjects in this BA course was formed properly and the students can adapt their knowledge well. The communication skills and the self-sufficiency of the students have improved significantly. However, the language knowledge – mostly in business English – of the students should be improved.

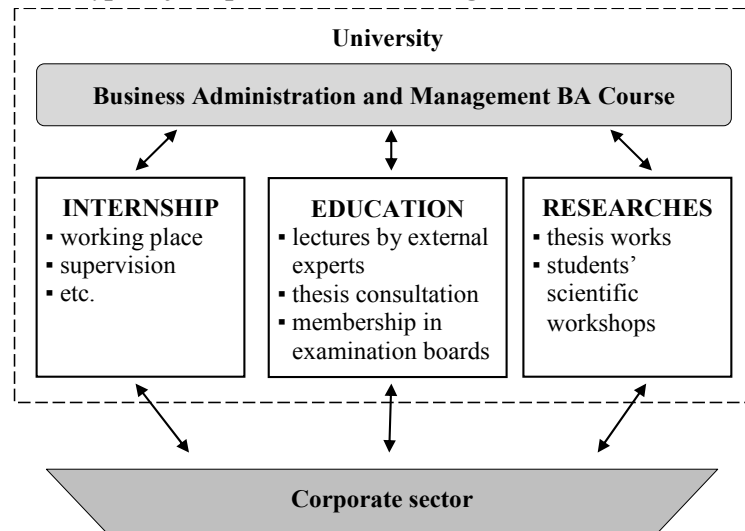
The assessment sheet of the practical training programme and the observations of the company visits are used not only for improving the structure of the internship, but also for the development and modification of our subjects and subject topics. Many students apply successfully for specific trainee programmes announced by different companies. In these cases, the companies often ask for a consultation with the universities and particularly the management of the courses about the time and the criteria of traineeship.

The companies may propose different topics for theses and essays for students' scientific workshop, which – after the approval of the Head of the BA course – are announced for the students. Moreover, the students may also propose specific topics supported by the concerned enterprise. This interactive work is very useful both for the companies and the students, as well as for the educational system of the BA course. Our experiences show that these specific topics give a more practice-oriented background for the students, and they are more conscious about their work. The knowledge they obtain through these connections is very up-to-date and may be used in practice. These connections generally end with the employment of the students at the given company or result a good reference for them in applying for a job. Nevertheless, it should be remarked, that – in order to avoid any problems deriving from too heavy or too easy topics – these specific topics should be assessed and approved by the Head of the BA course.

Another example for the good connections between the corporate sector and the examined BA course is the system of the final examination. Besides the own educational staff and the colleagues from other educational and research institutions, the representatives of the corporate sector are also invited to the final examination boards. 50-60% of the 7-10 members of the final examination boards are came from the corporate sector, mostly company leaders, who generally also take part in the assessment of the theses as external opponents. The members of the final examination boards can directly observe the theoretical and practical knowledge of the students. The experiences and the opinion of the committee members are discussed at the end of the final exams, and the head of the board fulfils a summarizing assessment sheet, which should be submitted to the head of the BA course. Of course, each members of the final examination board may fill in this form with their own remarks and opinion. This process was started at the Business Administration and Management BA course, and now it is carried out in each BA courses of the Faculty. The most important advantage of this system is the continuous feedback, which can help to get more information about the results of the educational work. The observations of the members may help either to implement the needed modifications in the final exam questions or to change the sequence or the structure of the concerning subject. The topics of the final exams are reviewed year by

year, and the opinion of the representatives of the corporate sector helps to improve the actuality of their content so they may be in accordance with both the educational structure and the needs of the labour market. We summarize the three main types of cooperation between the corporate sector and higher education.

**Figure 2: Three main types of cooperation between higher education and the corporate sector**



Source: own construction

The abovementioned examples are mostly depending on the personal connections of the lecturers or the former researches. The higher educational institutions make efforts to stabilize these connections by bilateral or multilateral agreements. Unfortunately, the realization of this process is sometimes very difficult, as it needs much work and time for both sides. In one hand, from the university's side it would be necessary to support consultations and tutorial activities equivalent with the lectures and seminars. On the other hand, at companies' side, the additional work of those colleagues, who are involved in higher education, should be supported even by extra salaries or specific allowances.

Unfortunately, the present economic situation does not improve this process. Without sufficient support this system could not be maintained at reasonable level, as it is not enough to base upon the commitment of the lecturers and the companies, therefore some supporting actions are needed at governmental level.

#### 4.2. EXPERIENCES OF THE GRADUATES' CAREER TRACKING SURVEY

Conducting career tracking surveys is useful for universities, who would like to be informed about their graduated students: what were they experiences as job seekers, what were their strategies for their future career. It is also useful to explore the students' findings about the education in the light of their working experiences, for example, what knowledge should be given by the course, how can our students fulfil the requirements of the labour market, what fields should be strengthened or missing, or even what are those fields which are unnecessary. Students career surveys are widely used tools for the exploration of the students' opinion. The results of Cichoblazinski (2011) strengthened that the turbulent environment is one of the most important factors which determine the students' career plans for the future.

Graduate career tracking surveys has already been taken regularly at the examined BA course, but in 2011, it was carried out in a new, unified form, and – as a part of the quality controlling measurements of the Faculty – it covered all the other BA courses of our faculty. The questionnaires were sent by e-mail, and we get the anonymous answers back in printed form. The share of the evaluable questionnaires was 6,5%, between 5-10% in case of different



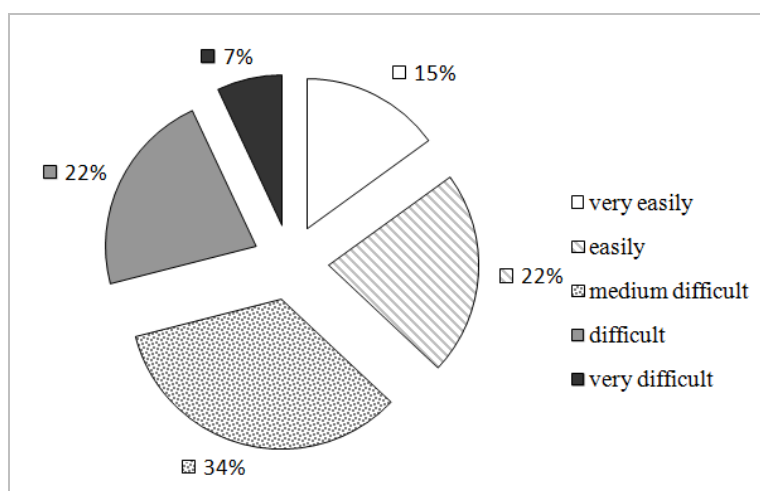
courses. The results of our survey may give adaptable answers for some questions and problems raised in the previous chapters of this paper.

One of our first questions was ‘Would you apply for the same faculty and the same course?’ A great share (81%) of our graduates would choose the same BA course according to their working experiences and the knowledge they obtained. 13% of them would choose the same Faculty, but another BA course, which means, 94% of our graduates were satisfied by the education they get at the Faculty of Economics and Social Sciences.

The assessment of the Faculty is basically good in our graduated students’ opinion. The highest grade was given to the following statement: ‘I am proud of our Faculty’ while the statement: ‘I ashamed to be a student of the Faculty’ got only 1,06 grade on the five scale, (value of standard deviation was 0,23). These answers suggest that the students can use their knowledge and those methods and techniques what they learned during their studies well both in their profession and in everyday work.

The level of the educational system may be characterized mostly with its acceptance by the employers, i.e. how quickly the graduated students were employed after their graduation and what kind of jobs did they get. Figure 3 illustrates the answers of this question of the survey. Although the unemployment rate in Hungary was 10,5% in the 3rd quarter of in 2011 and the negative impacts of the economic crisis are still unchanged, 70% of the respondents remarked application for possible jobs as very easy, easy or medium. It shows that their degree is competitive and well accepted in the labour market.

**Figure 3: How did you find a job after obtaining your degree?**



Source: own survey

79% of the respondents had a job, 15% continued their studies at MA or MSc courses, 3% were on maternity or childcare, and only 3% were unemployed. 80% of the employed worked in their own profession or at a very close field. 50% of the employed graduates started their work during the last months of their university studies; the other half got their job in four months after obtaining their degree. 10% of the students could find a job in connection with the compulsory internship programme. Nevertheless, it should be underlined, that these results are slightly distorting, as 76% of the respondents works in Budapest and the county seats, where one can more easily find a job than the country average.

We also examined the satisfaction of the graduates with their present jobs, by a five-grade scale (1 – not satisfied, 5 – maximum satisfaction), which resulted a 3,66 grade average (value of standard deviation was 0,87). More than two-third of the employed graduates do not plan changing their job in the future. 78% of the respondents plan further studies, which mean a very outstanding level. Most of them would like to obtain another university degree in order to be more competitive in the labour market.

40% of the respondents marked the usefulness of the knowledge they get at the BA courses very useful and well adaptable, while according to 47% of them marked this knowledge is medium adaptable.

The fields of knowledge and the subjects that were considered most useful can be well distinguished according to the different courses. For example in Human Resources BA course labour law, HR management issues and labour connections were regarded most important, in Business Administration and Management BA course business economics and management, finance, management and leadership and business communication were evaluated as most useful. According to the graduated students of Andragogy BA course, the most useful subjects and topics were psychology, labour market studies, and communication.

As a result of the experiences of this survey, in some courses the curriculum of some subjects proposed to be broadened and more practice-oriented. However, it should be stated – as it was mentioned in the first chapters of this paper – that it is a very difficult task for higher educational institutions to improve the practical knowledge of the students, particularly nowadays, where the needs of different working places are so different, wide, and changing continuously. Higher educational institutions are in very hard situation. In BA courses not only a well-built base should be made in different economic and general methodological subjects, which the students may use in their further studies, but also other, more specific knowledge should be submitted for the students. The situation is more complicated in different types of courses. There is a clear difference between students of full time courses and correspondent courses. The students of correspondent courses are generally have working experiences, and they more easily recognize the importance of practical knowledge, and for example, they pay more attention for choosing elective subjects.

The respondents of the career tracking survey would improve their knowledge on the following fields: business language, business finance, and they would like to get more information about practice, the working methods of companies, so they would like to get a more realistic view about the operation of the companies, and the different methods they use. Language studies make a special problem in education. In part-time (correspondent) courses there is no or not enough opportunity for language courses, while in state-financed or full-tuition (financed by the students) full time courses the institutions (universities) cannot or hardly can finance the special needs of such language courses, which really improve and maintain the active professional language knowledge of the students.

We also examined how the university studies could improve the different competences, which are needed in professional life and work. The statements should be valued at a five-grade scale. The results are shown in Table 2.

**Table 2: Assessment of the competences and attitudes obtained during the studies at the Faculty of Economics and Social Sciences of the Szent István University, Gödöllő**

Statement	Average grade
Competences for further learning activities (using new knowledge, organizing my studies)	3,73
Professional communication competences (oral and written communication skills, self-expression skills)	3,57
Learning professional approach and attitudes	3,54
Adaptation to new situations, self-control	3,46

Source: own research

The graduates, after having their basic practical experiences, regarded the knowledge-level and further learning activities as most important, while connections and the university degree was marked only as medium according to the five-grade scale. According to the results of our

survey it may be stated, that the three main issues of the professional success in our graduates' opinion are practical approach, professional communication and good management of information. Language knowledge and team working competences were also marked important.

A very important result of this survey is that it makes an evaluable feedback about our faculty's educational system. In one of the questionnaires, there was a question about what are the strengths of our faculty in the students' opinion, and there was another question about which knowledge and competences they acquired during the university studies are considered as most useful in the work. A significant share of the respondents marked the same subjects and competences as the strengths of the faculty that was regarded as most useful in their professional life and working experiences.

Our faculty is in the middle of upper quartile in the rank of the Hungarian economic BA courses. The faculties in the upper quartile are most likely have such courses where the specificities and the general structure of education can be used successfully in practice and give such knowledge, which is competitive in the labour market and helps to get appropriate job opportunities for their graduated students.

The connections between the financing form (state-financed and full-tuition training), the type of trainings (full-time and part-time i.e. correspondence courses), and the different courses were examined by Chi-square tests and analysis of variances.

Another interesting result of the survey was that the students of full-tuition part-time (correspondent) training have assessed the usefulness of their studies by significantly better values than those of state-financed training courses. The reason of this situation may be that the part-time students at full-tuition training courses could use the knowledge they acquired during their studies immediately in practice in their working place.

There may be differences between the different courses of a given faculty, which should be taken into consideration by the institutions. For example, in the examined six BA courses, those students of the Business Administration and Management course who had the opportunity to learn some subjects in foreign languages, and they could learn business language intensively in two semesters, regarded their professional language knowledge significantly better.

In order to maintain the competitiveness and practice-oriented educational structure and to keep the good connections and close cooperation with the corporate sector, university courses shall establish and operate an effective quality assurance system, by which the different activities (e.g. education, research, practical training etc.) of the given course may be controlled, and the possible deviation from the original objective may be detected, so as the needed actions may be taken in time. The system should work in an interactive way, i.e. the experiences of the different parties (students, educational staff, and partners from the corporate sector) may be shared and submitted towards the management of the course.

## **5. CONCLUSIONS**

Higher education should not satisfy all requirements of the changing needs of the business sector, because its main task is to provide general basic knowledge for the students, which will be a good base to acquire additional, mainly practical knowledge.

The management of higher educational institutions – in order to work successfully – should consider their stakeholders' needs, by keeping good relationship and have parallel discussions with both sides. This cooperation may help to keep the balance in the changing labour market and also may improve the quality of education. The Bologna system supports the building up of these relations, there are many ways to build cooperation between the business sphere and the system of higher education, but there are still many unused potential. Based on the results

of our case study it may be stated, that the relationship between corporate sector and universities are be multi-layered and both parties can use the feedbacks of the common work. In our time, the cost effective approach has been strengthened in the business sphere, which amplifies the need of quick returns which implies the need for “instant” labour force who can work well immediately. It can be successful in short terms, but it involves serious dangers in medium- and long-term periods. When only practical knowledge is considered most determinant, those key competences, the basic of knowledge may be omitted, which make the basement for further self-improvement, lifelong learning, synthesizing abilities etc. The balance between the short-term and long-term needs of the whole society should be kept even in crisis-time.

In order to accomplish their mission, universities should build up a system of planned and regular measurements by which they can use the feedback from the experiences of both the graduate students and the corporate sector. By this process, the experiences and the opinion of the stakeholders may be built in the further work, and it may improve the performance of the higher educational institutions.

The new educational system has brought new opportunities for connecting business sector and educational institutions. The efficiency of this cooperation may be improved by a more direct governmental support (e.g., tax allowances and cost compensation for companies which are involved in students’ internship programmes, programmes, supporting the contributions of new graduates, etc.).

In summary, in establishing and developing university courses and their curriculum efforts should be made to satisfy the needs of all the stakeholders. The knowledge and competences acquired during the studies shall meet the requirements of the students, the employers, the labour market, and, in addition, the needs of the whole society. As it was mentioned earlier, higher education cannot change its position immediately, it is more important to keep these goals in balance.

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*Jürgen Fonger*

### **3.6 GERMAN SMALL AND MEDIUM SIZED ENTERPRISES AND THEIR ROLE IN THE TEMPORARY WORK BRANCH**

**Summary:** There are two intentions of the paper: Firstly, to compare East- and West German small and medium sized enterprises in the private employment agencies branch with the fact that the development of small and medium sized enterprises in general is very important for any kind of policy decisions. By this comparison shall be found out, if there are significant differences between east- and west- German small and medium sized enterprises concerning the increase or decrease in the number of businesses and the increase or decrease in the number of employees. Secondly, the aim is to find out, if there is a higher contribution to the reduction of unemployment in East or in West Germany or, in other words, are small and medium sized private work agencies more successful in fighting unemployment in East- or West Germany. This information has to be considered in order to make labor market policy decisions successfully. Since the demographic change has substantial impacts on the German economy, one chapter deals with that topic. Insofar the paper has a descriptive nature that gives an overview about the current situation by comparing East and West Germany.

**Keywords:** small and medium sized enterprises, temporary work agencies

## **1. INTRODUCTION**

Time work has established itself in Germany and can continue to expand at high rates of growth. The reason for this is among others the gradual deregulation of temporary employment law cited. Working time flexibility meets the needs of companies and represents one of several ways to bridge personnel shortages. From employee perspective, it enables avoidance of unemployment and ensures the maintenance of a fixed income. In addition, the professional development supports and provides a means of contacting different companies. Overall, they make an important contribution to relieve the labour market (CIETT, 2007). Small and medium sized enterprises are the backbone of the German economy.

Although they are fraught by several disadvantages like more difficulties to get access to credits caused by a lower capital base compared to large companies they could prove successfully their flexibility and their ability to find innovative solutions (Houseman, 2003). They play an important role for the German economy in a whole as experts for regional solutions with a very high specification level, quite often for niches which, however, manifest as branches with a high growth potential (Klös, 2000). These solutions base on know-how obtained by a high ability to learn and transfer the knowledge into new solutions. These solutions are often the foundation stone of new technical developments and therefore have worldwide relevance (a good and current example is the development of the wind and solar energy technology). In Germany, the structure of the temporary employment agencies is characterized by high fragmentation. This is evident when considered in relation to business density and to the number of temporary workers in international comparison.

In this respect, there is still a considerable need for consolidation for the German enterprises level, if the relatively high distance of the leading countries is used as a yardstick. So far, however, a consolidation took place mostly only at the top of the temporary agencies, especially in foreign companies by acquisitions and of small and medium sized German competitors. To the estimation of the situation of small and middle businesses of the temporary work industry, a clear definition is required by quantitative and qualitative delimitation criteria, which take into account the specifics of the temporary work industry

being formed to large-scale enterprises. The temporary employment sector in Germany is especially marked through small and medium businesses where are the typical characteristics of small and medium sized enterprises such as a high level of personal, one relatively manageable market share and relatively low human and financial resources to bear.

## **2. DEFINITION OF SMALL AND MEDIUM SIZED ENTERPRISES**

### **2.1. QUANTITATIVE FEATURES**

In science and practice, certain differentiators have emerged, most of which are represented by absolute figures. Typically, the annual turnover, number of employees and total assets are used delimitation of the size classes. However, variables such as value added, payroll and capital ratios and absolute equity ratio, equity or return on assets and market share are isolated as relative measures, unless they leave on the typical firm size of middle class. In Germany, normally a quantitative differentiation of small, medium and large enterprises is carried out from the annual financial statements, total assets and the annual sales. From these sources, information's like the number of employees (annual average) in the balance sheet and further information can be taken. The quantitative definition of the German trade law is particularly good at applying commercial, corporate and publicity of legal regulations (e.g. preparation and publication of annual accounts). However, the regulations apply only to corporations.

At European level, the EU uses a differentiation by micro, small, medium and large companies. The term "small and medium sized enterprises" is also a criteria generated by the EU. Background for this definition is the unified support of small and medium sized enterprises at Community level, for example at small and medium sized enterprises support programs (EU Commission, 2003). As a quantitative separation the characteristics total asset, annual turnover and staff numbers are used. The German national bank finally draws a demarcation criterion for their studies on the economic situation of small and medium sized enterprises in Germany alone, the annual turnover approach. The reason for that is the fact that financial statements or balance sheets do not consistently contain information about the number of employees. The definitions are obviously inconsistent, because there are different approaches of definitions for small and medium sized enterprises. The decision for the underlying criteria for this paper are the following as they fitted best with the data used for the evaluations made: The selected enterprises of the temporary work branch had max.149 employees and an annual turnover of max.27, 5 millions € and, where possible, a balance sheet total of max.3, 5 million € (IfM, 2007).

### **2.2. QUALITATIVE FEATURES**

With a qualitative delimitation, the attempt is made to fix enterprises with a certain business type. This can be made by qualities and structures appearing typically at small and middle class enterprises. The union of the enterprise owner and the corporate management is primarily characteristic for medium-sized enterprises. The owner is planning, heading and supervising similarly. The advantages and disadvantages, which appear at the separation from management and those who control are dropped with that. By flat organizational structures and a low formalization degree there is usually a personal contact between the businessman and the employees with each other. Due to the scarce resources and limited capital in comparison with large-scale enterprises, the spectrum of possibilities of-medium-sized enterprises is restricted (Gilmore, 1997). Due to the typically low capital base of medium-sized enterprises they have only a restricted access to the capital markets in comparison with

(listed) large-scale enterprises. Responsible for this are the relatively high financing costs and the proportionally low financing volume. Therefore, performance supply at simultaneously higher performance, flexibility and distinction and it requires a less friction losses organization to remain competitive.

In principle, business small and medium sized enterprise decide different from manager or a management team particularly since personal motives, such as impulse after independence, independence and personal liberty or responsibility opposite the business family, the society and the environment, at the entrepreneurial decision making flow more and more. The legally highest decision competence lies with the owner businessman so that as opposed to hired managers no-one else has the right to the prevention, revision and control of his decisions. Managers do not get their decision competence right based on an employment contract from an (original) right of their own but from strange (derivative). Authorities are often absent for the justification of the entrepreneurial decisions in medium-sized enterprises. This leads in the decision behaviour to the subjectivity whereas objectified decisions are met more strongly at management - team's decisions. Due to the mostly temporal restriction of an employment contract, from the point of view of time the decision competence is limited so that hardly a relationship can arise to the enterprise. A lifelong relationship, however, normally lies in front of, with the owner enterprise, which is transferred to the following business generation. With the characteristic features of the middle-class business type a strategic profile also can be created by middle classes enterprises (Waas, 2003). This contains on the one hand the middle classes specific strengths and weaknesses as well as on the other hand the middle classes specific chances and risks which are significantly different from those of the large-scale enterprises.

In addition to quantitative definitions the EU uses "independence" as a qualitative indicator. Here, a company must be regarded as independent, if not 25 % or more of the capital or voting rights owned by one more firms jointly available. Exceptions are the involvement of state holding companies, venture capital firms, Business angels, Universities, research centers, institutional investors including regional development funds and autonomous territorial authorities.

### **3. GERMAN SMALL AND MEDIUM SIZED ENTERPRISES IN THE TEMPORARY WORK BRANCH**

The systematic support of small and medium sized enterprises is quite an important part of the German Business development policies. The small and medium sized enterprises in general are characterized by a high flexibility and innovation capability. However, the small and medium sized enterprises are typically confronted with certain typical problems like a smaller capitalization or a more difficult access to credits. In this context, the small and medium sized enterprises of the temporary work branch are not different from the ones in any other branch. The temporary work branch is of particular interest as it offers a chance to be a "springboard" into permanent jobs. An important indicator for the successful transition is the duration of the work at the borrower companies before acquisition by the borrower. More about that interesting topic is described under "5. Results and Conclusions". Another aspect is particularly worth being mentioned, namely, the temporary work agencies have several functions, especially the adjustment of labor demand for the labor market in a whole. In this sense timework offers an opportunity for the work borrower companies to support the process of adjusting the needs of employees with the increase of their order volumes. Another important aspect is the development of the real wage of time workers, where an "equal pay, equal treatment" of time workers and unlimited employees couldn't has been realized. Although there has been a significant change within the last years, still the wages are not



everywhere governed by unique rates. The differences between the wages of the permanent workers and the wages of the time workers, which result of supply and demand (with hardly any regulation), are part of a research area which shall not be extended here (Kvasnicka 2002).

At the end of June 2011, there were 910.000 temporary workers in Germany working in 17.400 temporary employment agencies. 11.100 or 64 % (Germanys Federal Employment Agency, 2011) of these agencies were predominantly or exclusively working in the temporary employment business. In the development of the number of temporary workers, there is a typical pattern recognizable: At the beginning of an economic upturn the need for additional workers is covered with temporary workers. After that the enterprises start slowly to hire the workers as their own employees. To measure the contribution of the temporary work branch for the permanent end of unemployment by a take-over by the temporary work place, the number of the measured duration of the temporary work is an important number. Short durations of a temporary work are typically a sign for a take-over which ends unemployment permanently.

### **3.1. SMALL AND MEDIUM SIZED ENTERPRISES OF THE TEMPORARY WORK BRANCH IN WEST GERMANY**

In June 2011 in West Germany 15.018 temporary work enterprises were counted altogether, as small and medium sized enterprises they were 1.214 in the temporary work branch. These small and medium sized enterprises employed about 65.000 workers. In comparison to June 2008: 1.050 small and medium sized enterprises employed about 56.000 workers which meant an increase of about 13 % of the number of workers (Germanys Federal Employment Agency, 2011).

The number of employees in West Germany which worked for a small and medium sized enterprises in the temporary branch for duration between one week and three months was 15.500 (status in June 2011, the number that worked for more than three month was 16.808 and the distribution by sector of the employees worked for temporary work agencies in small and medium sized enterprises was the following: 33% as laborers without a specific vocational training or education over all branches, the further most important distributions of applications of the employees were in the services branch (13%), administration (8,8%), metalworking (9,6%) and in the manufacturing branches (4,3 %) (German Federal Employment Agency, 2011).

### **3.2. SMALL AND MEDIUM SIZED ENTERPRISES OF THE TEMPORARY WORK BRANCH IN EAST GERMANY**

In June 2011 in East Germany were 2.350 temporary work enterprises counted, 193 as small and medium sized enterprises. These small and medium sized enterprises employed about 13.746 employees. In comparison with June 2008: 161 small and medium sized enterprises employed about 11.400 workers, which means an increase of about 17 % of workers, the number of employees in East Germany which worked for a small and medium sized enterprises in the temporary branch for a duration between one week and three months was 6.531 in total in all small and medium sized enterprises temporary work agencies (status in June 2011/Germanys Federal Employment Agency, 2011).

The number that worked for more than three month was 3024 (Germanys Federal Employment Agency, 2011). The distribution of the employees worked for temporary work agencies in small and medium sized enterprises was: 27% as laborers without a specific vocational training or education over all branches, the further most important distributions of

applications of the employees were in the services branch (17%), administration (7,3%), metalworking (5,4%) and in the manufacturing branches (2 %) (German Federal Employment Agency, 2011).

## **4. IMPACTS OF THE DEMOGRAPHIC CHANGE**

### **4.1. GENERAL IMPACTS ON THE GERMAN LABOR MARKET**

The impacts of demographic change on society are varied and cover all areas of life: the pension situation and the associated security systems, the education sector, urban, rural and urban structures, the medical sector and in particular the economy and the labor market. The implications of the demographic change on businesses, particularly small and medium sized enterprises will be extensive (Schlasze, 2009). Although the changed circumstances not uniformly affect the business some of the macroeconomic developments and therefore more or less all companies will be affected. The demographic change is taking place in an economic situation that requires more skilled workers than ever before.

The economic and social change is characterized by the globalization, technical developments and the transition from an industrial to a service economy (Prezewowsky, 2007, p. 28). Each of these processes represents an independent transformation. However, strong mutual interdependence and linkages are typical elements of impacts of the demographic change. In particular, the transformation from an industrial to a service economy has caused profound changes in the structure of the employment. As a result, within the tertiary sector (services) is an over-proportional growth measurable in the last few decades. The shift from less productive activities to a higher proportion of services means that the work will be less physical but more ambitious relating to the skills; associated with the increasing spread of information and communication technologies, which calls this trend continues to strengthen and to demand increasing knowledge-intensive activities in the workplace (Prezewowsky, 2007, p. 31). The required knowledge for the exercise of these activities is largely personal. Thus is the ability to use knowledge sources in order to constantly improvement a key competitive factor. Currently are no longer the classical factors of production labor, land and capital a determinant factor for the performance of the company, but the knowledge of its employees (Prezewowsky, 2007, p. 34). In the view of the demographic developments there will be fewer young people available, who bring new knowledge and innovation into the enterprises. The term “demographic change” is synonymous with demography, often used with population.

The population statistics include the population its structure and population movement, population models and projections. A population forecast is an estimate of future population growth. Important factors are the number of births the mortality and the migration. At the end of 2010 lived 82.1 million people in Germany. This will be reduced by 2050 to nearly 69-74 million. At the same time will increase the average age of residents from 42 years in 2005 to 50 years in 2050. Here, the relations between old and young will change significantly. On the one hand, decreases the number of people less than 20 years in 2050 to more than 30% of the population and the 20 - to 65-year-old to below 22-29%. On the other hand, the number of 65-year-old and older increase by about 43% for businesses, the development of the labor pool is more important than the development of the population in a whole. The labor force will decline from 2004 to 2050 by 13 million people to 31.5 millions. The decline of the labor force potential in the former East Germany is with 55.4% more dramatic than in western Germany with 22.9%. At the same time shifts the age structure of the labor pool. Both, the number of employed persons between 15 and 29 years and the 30 to 50 year olds will fall sharply. Only the number of older workers raises from 10.3 million in 2004 to 14.3 million in

2020 to 2050 back to about 11.2 million. In addition to the decline in the labor pool also the shift in age structure vary significantly from region to region, in some districts of Germany, the number of older people is about two thirds or more. Because of the sharp decline in the younger labor force, the competition between the vocational training alternatives, i.e. the dual training system and the technical and higher education sector, as well as between the companies will increase. In addition to the reduction and the aging of the labor force potential the skill level and the skill structure of the population will change. The nowadays middle-aged people between 30 and 50 years of age will not be replaced adequately neither with the proper qualification levels nor at the needed extend. Their departure creates not only a quantitative gap, but the companies are facing the problem to replace its quality. The assumption that better qualified younger generations replace older employees is pretty unlikely. If education continues to stagnate at the current level there will be a huge lack of skilled workers. For example, an increasing shortage of machinery, electrical and industrial engineers as well as a lack of skilled workers in the IT- branch is already recognizable. Summarized the demographic change will lead to a partial shortage of labor, a labor force reduction followed by increased wages, an increase of employees with performance constraints, reduced staffing flexibility, know-how gaps and a loss of innovation are predicted (all data including percentages are taken from: Germany Federal Statistical Office (2006) and (2011)).

#### **4.2. IMPACTS FOR GERMAN SMALL AND MEDIUM SIZED ENTERPRISES:**

Small and medium-sized companies compared to large enterprises have different initial conditions in order to respond to the impact of change. Consequently, not all demographic and personal-developing concepts, which are related successfully in large enterprises to solve problems caused by the demographic change, are also suitable for small and medium sized enterprises. Moreover, in this context the current research results offer only sparsely methodological approaches for small and medium-sized companies. For this reason it is important to identify specific characteristics of small and medium sized enterprises, by means of suitable approaches but also to identify barriers to action.

The characteristics of small and medium sized enterprises depend among other reasons on the size of the company, the organizational structure, and the strategic orientation. The aging and shrinking of the total population result a change of the scale and structure of the labor force. A clearly noticeable change of the situation is to be expected until the year 2015. A general labor shortage is not expected in the short run but the demographic developments have led to a result that a high proportion of the workforce will have an average age over fifty years by 2050 (Länge, 2007, p. 38). However, the aging of the workforce is not a new phenomenon, but as not each company was affected by a large extent of aging workers a demographic change in Germany is to be expected as a problem for many firms in the coming decades. This is due to the fact that the older cohorts will be more occupied in the future. Moreover, at present there are government plans for an early retirement practice which could be explained by the intention of the companies to retire older workers as early as possible in order be replaced by young people; especially the 1990s were a period of time when several possibilities of an early retirement were used for this purpose provided by the rules and laws for State funding retirement (Kay, 2008, p. 19). As a rule, the early retirement leads to no significant financial and social losses to the company. For this reason, early retirement is usually carried out without resistance. In future, the demographic effect is enhanced by the increase in the retirement age, because older people will stay longer in employment. The employment rate of older people will also rise for other reasons: the planned and already partially realized abolishment of early retirement instruments will limit these possibilities (Bellmann, 2007, p. 2). Thus in the future, the pressure increases on the elderly to stay longer

in the business, even nowadays the number of younger workers is larger than the one of older people in the company, nearly 60 percent of German companies have no employees who are older than 50 years (Länge, 2007, p. 22).

Another challenge in the context of demographic change is the decline of the labor potential of young people. In the near future, it will be more difficult to bridge the gaps of the output that emerge in the labor market by the retirement of the baby boomers. By the year 2050, the number of people less than 20 years of age will decline from now 17 million to a little more than twelve million people (Germany's Federal Statistical Office, 2006, p. 19). Consequently, the number of persons in a vocational training-related age will decrease disproportionately. As a result, there will be fewer young people seeking work and thus give a smaller number of apprentices (Länge, 2007, p. 38).

The relationship between the advancing and retiring cohorts will continue to deteriorate. In the next few decades, the shortage of skilled workers through will still strengthen. A skilled labor shortage could, according to a study from the IAB establishment panel in 2005 and 2006 could not be proved for the economy in a whole so far (Bellmann, 2007, p. 2). It therefore seems likely that these developments presently in small and medium sized enterprises are not yet noticeable. In addition to the quantitative number of workers, the qualification-substitutability also plays an important role. A partial mitigation of the decline in skilled labor could be reached, if the educational level of the younger parts of the population could be significantly increased (Kay, 2008, p. 22). However, a complete coverage of the skilled labor demand by raising skill levels will probably not be reached. The advancing cohorts are always numerically smaller than the retired vintages, in addition there 's a stagnant level of education among the population (Bellmann, 2007). In contrast, challenges due to increased global competition and rapid technological and organizational progress, the requirements for the qualifications of the staff will grow. Consequently, the demand for higher skilled workers will increase and decrease the need for people with no further vocational training. As a result, with an expected shortage of university graduates as well as a smaller amount of people who have completed vocational training, probably an excess supply in the future will prevail in the labor market for unskilled and unqualified persons. In summary, the results of the significance of demographic change mean two central developments for the companies:

The long-term leveling of a higher average age of the workforce and the gradual retirement of the baby boomers, with a moderately lower numbers of offspring recruits. However, the demographic change has "(...) neither automatic nor identical effect for companies." (Länge, 2007, p. 42). This means that not every company will inevitably be faced with a rapidly aging workforce. Rather, the previously existing age structure of the company for further development initiate measures to maintain the performance and productivity of older workers. It is quite necessary to deal with an aging workforce and generate adequate organizational development activities for the 40 plus generation. These also includes to recognize and to support the potential and skills of older employees. The promotion and education will last "life-long" and life-course-related employment policies are central fields of activity of the company. Small and medium sized enterprises might be more affected because large companies will probably be able to satisfy their demand for junior staff due to their greater attractiveness in the labor market (Regnet, 2004, p. 13). In this context, both conducive to learning and healthy working conditions, an optimal environment and good training opportunities, are central criteria for small and medium sized enterprises and their workforce. The change in the labor force is a factor that will affect the operational workforce for an extended period of time. By the aging and the shrinking of the workforce some fears developed whether the growth and innovation potential could sink within the German companies, especially within small and medium sized enterprises (Bellmann, 2003, p. 26).

#### **4.3. POSSIBLE SOLUTIONS FOR SMALL AND MEDIUM SIZED ENTERPRISES**

Small and medium sized enterprises networks provide an increased ability to learn and gain external intangible resources (Evers, 1998). Small and medium sized enterprises can overcome typical network capacity and environmental constraints. Furthermore, there is the advantage of reducing uncertainties in the behaviour of other actors which can be expected. They can also lead to an increase in performance of their outputs by new knowledge that is gained and thereby start a collective learning process (Weyer, 2000). It could be shown that through common network activities a high standard of information and experience can be achieved for network operators of small and medium sized enterprises and in particular the extent of reduction of information asymmetries could be realized through the formation of networks and therefore raise the profit (Astor, 2001, p. 16).

The establishment of regional networks for professional development qualification offers the possibility to initiate joint labor pools. If this setting is a success, it could be a solution for the qualification problems that come in the wake of the demographic change. Faced with a higher and higher percentage of older employees in the next few years this appears to be an important possibility. In addition, networks offer the possibility of the temporary use of competencies (Kowatsch, 2005, p. 29). Small and medium sized enterprises will thus allow access to new competencies. Special services can be used mutually and learning and knowledge effects are achieved. Regarding an impending demographic change, it should be emphasized that in particular in networks between small and medium sized enterprises and other institutions valuable knowledge of the common methods and ways to finding solutions are to be won. In this context one can speak about a change from a knowledge network to a cooperation network. Overall, networks must be evaluated as tools that promote organizational learning processes. However, these possibilities are combined with some threats as well.

The organization of knowledge in networks is characterized by a combination of treads and chances. To organize a participating network companies must be highly reflective about their competences, strengths and weaknesses. The genesis and use of knowledge is significantly influenced by the design of communication techniques. Difficulties in networking also result from a reduced level of safety (Trier, 2003, p. 107). Fluctuation risks of network operators are in terms of human dependency particularly difficult to handle. Due to the voluntary nature of networks, the distribution of rights and obligations are problematic. In addition, both networks are prone to "over-complexity" of the membership structure and the general openness of the network, as well as to uncertainties in terms of planning (Trier, 2003, p. 107).

There are relevant regional aspects as well: Some regions have a long industrial tradition and well-trained employees, while other regions have significant structural deficiencies and thus little enforcement opportunities for extensive network concepts, especially for small and medium sized enterprises exist barriers for corporate development especially for regional networks (Astor, 2001).

Small businesses fear a loss of expertise and a lack of cooperation by naming a support demand to generate a network structure. There are access problems for small and medium sized enterprises to public funding and collaborative projects. Furthermore, there are not enough contact points, which could be helpful in finding a partner, which makes the search for network partners very laborious, and time consuming. However, not to lose sight of that business may be lacking even in strategic concepts, resulting from this there will be limitations of the possibilities of networking.

Networks are not able to compensate missing solutions for problems existing within the companies, especially organization structures or procedures. It is important that both partners are able to improve their output through the network and therefore design a situation, which is noticed as a “win-win” situation by both sides.

## 5. RESULTS AND CONCLUSIONS

The development of the small and medium sized enterprises in East and West Germany seems to be quite similar, however, at different levels. Although these levels are quite low, especially compared with the number of employees in Germany, which is currently approximately 41 millions, some aspects are quite interesting. E.g. it is mentionable that the small and medium sized enterprises in the temporary work branch kept growing continuously and with high growth rates in East and West during the last three years. A presumed common criticism of temporary work in general is the missing contribution of temporary work to reduce unemployment persistently. There is a lack of data to find out instantaneously how many time-workers ended their employment at the temporary work agency in order to begin a new permanent job typically at the employers where the time workers were working for while being an employee at the temporary agency, the so-called borrower or hirer.

To assess the impact of the takeover by the hirer for the permanent end of unemployment, an auxiliary can be used. This is the duration of the work at a temporary agency. The available data differs between three periods: up to one week, one week up to three months and more than three months work at the temporary agency before the temporary appointment ended by beginning a permanent job. The duration of one week up to three months is a typical duration for those time-workers who found a permanent job subsequent to the timework. The reason for this is that it is assumed that up to one week is a period, which is usually too short to be taken over by the hirer, in these cases the timework ends often earlier than planned for other reasons like missing qualification or reliability. If the duration of the timework as an auxiliary is considered as a possible indicator to measure the contribution of small and medium sized enterprises in the temporary work branch, then it is easy to see as described above that in East and West Germany the contribution is quite high without significant geographical differences. The impacts of the demographic change will have considerable impacts on the society and therefore on the Labor market as well. The small and medium sized enterprises of the temporary work branch will be confronted with these problems and have to find solutions just like any another company which is faced with the impacts of these changes. It is an essential goal to achieve a unique selling position for any company in the temporary work branch by providing the needed number of the “fitting employees” for a certain part of the Labor market. A possible way to deal with the looming problems could be the implementation of a systematic network system. However, networks can include several threads for the company, if it isn't well planned there could arise threads like a loss of competences and a lower market performance, they offer a large potential in order to improve the efficiency and effectiveness of the companies.

To resolve this barrier there has to be designed new platforms and approaches that lead to more formalized and structured procedures that allow a systematic network building which could be controlled by a neutral institution. It is extremely important for the companies in this branch to fulfill the demand of the markets, i.e. the needs of the hirer companies concerning the number, skills and abilities of the workers. This would reduce the fears and prejudices of potential small and medium sized companies. To create new ways of support programs for small and medium sized enterprises within the EU especially as a part of labor-market support in order to fight unemployment it would be a big step forward to find a unique definition for small and medium sized enterprises. Within the member states of the EU exists many

different types of definition approaches. With a definition like this, it would be possible to make policies generated to support the labor markets of the member states comparable, although regional aspects would be considered as well. Thus combined with a Europe-wide data about the temporary work branch would mean an improvement and allow careful decision-making.

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*József Poór, Gizela S. Susnjar, Agnes Slavic, Zsuzsa Karoliny*

### **3.7 TRAINING PRACTICE IN CENTRAL AND EASTERN EUROPEAN COMPANIES BASED ON CRANET RESEARCH**

**Summary:** In the period of global competition and radical economic changes, human resources and their intellectual capital become a vital resource for organizations. Employees' competence, knowledge, skills, and experience have to contribute not only to the company's financial and marketing success, but also to broader (environmental and social) considerations. The main aim of the Training & Development as a human resource management (HRM) activity is to help this organizational knowledge acquisition systematically. In Central and Eastern Europe (CEE) HRM managers have a challenging task to implement new methods of effective in-company trainings. The aim of this work is to describe some characteristic features of the training practices in six CEE (Bulgarian, Czech, Hungarian, Serbian, Slovak and Slovenian) countries based on Cranet international research results from the year 2008/10. The findings can provide good benchmark for HR practitioners when designing their new region- and country-specific training approaches.

**Keywords:** training, Central and Eastern Europe, human resources, Cranet

## **1. INTRODUCTION**

In the 21st century when the companies' success mainly depends on the competences and innovativeness of their employees, training and development, as one of the key HRM functions becomes more and more important. Lekovic and Susnjar (2010) note that training includes all those activities, which enable, make easier and accelerate knowledge acquisition necessary for successful business activity. On the other side, Armstrong (2007) defines development as the growth or realization of a person's ability and potential through the provision of learning and educational experiences. Peretz and Caspi (2011) enhance that organizations can follow many paths to secure a skilled and competitive human force. One of the most direct ways is to focus on training and development of human resource management activity. The more advanced the firm's training policy is, and the more efficiently it invests in T&D, the more likely it is to position itself well on the market (Stavrou and Brewster, 2005).

## **2. LITERATURE REVIEW**

According to one school of thought, HRM practices always depend on the context. Based on a longitudinal study conducted in 18 European countries Nikandrou, Apospori and Papalexandris (2005) emphasize that European HRM is characterized by internal variations among clusters of countries and at the same time by external uniformity compared to the rest of the world. Mayrhofer, Sparrow and Brewster (2012) have a similar view, underlining that considering the various elements of external context (national cultures, institutional environment, economic factors, social characteristics, education and political systems) Europe offers a mix of hetero- and homogeneity leading to a unique context for organizational decision makers about HRM matters. Mayrhofer, Sparrow and Brewster (2012) identify the following differences between European and US context of HRM which makes the US HRM techniques only partly applicable in Europe:

- *Stakeholder rather than shareholder approach* – The American shareholder approach insists on the HRM's ultimate aim to increase organizational performances, evaluated

based on its impact on corporate strategy, customers or shareholders. The European stakeholder view makes it possible for a greater number of actors to influence HRM decisions based on their legal rights for it. This way the interests of employees, customers, trade unions, creditors and NGOs may be taken into account beside the influence of owners and managers.

- *The role of the state* – In Europe, state regulations have a more significant influence on a company's HRM activity than in the US. In Europe, the European Union or even regions within a country may have their own HRM policies. Besides, in Europe state is a large employer, too, with special employment practices.
- *People's rights in and to their jobs* - The majority of the European states guarantee peoples' rights in and to their jobs. In the US with the national culture characterized by high level of individualism and low uncertainty avoidance, there is less legislative control over employee relations.
- *Importance of consultation and collective representation* – In Europe trade unions are supported by the legislation, and play a more important part in companies' HRM activities than in most part of the world.

Even within Europe there are significant differences in internal and external HRM context and therefore in HRM practice, too. Brewster, Morley and Buciuiniene (2010) state that charting the landscape of HRM in Central and Eastern Europe (CEE) is a difficult task. The societies of CEE have undergone through radical changes since the early 1990s, but with rather different outcomes. CEE is now characterized by rising economic heterogeneity and rapidly changing socio-cultural context stressed with privatization, increasing FDI and emerging individualization.

Morley, Minbaeva and Michailova (2012) stress that CEE is not historically well documented in management and human resources literature and contemporary developments occur against the backdrop of large scale of political, economic and socio-cultural shifts. Poór and Milovecz (2011) state that the quick transition from state control and national economic planning to free market, globally competitive capitalism in Central and Eastern European region resulted in significant consequences.

- The political and administrative map of the region has undergone drastic changes (before the transition there were eight, now there are sixteen countries in the same territory).
- Due to the privatization process the private sectors has become dominant in GDP terms.
- Economic problems – the transition is followed by high inflation and decrease in output performance.

Ignjatovic and Svetlik (2003) analyzed data of 24 European countries (Cranet research from 1999/ 2000 research period) and determined four European HRM clusters:

- Nordic cluster is characterized by employee-focused HRM of medium intensity.
- The Central Southern cluster where HRM is of low intensity and mainly gives administrative support to managers.
- In the Western cluster HRM activities are intensive and professional and HRM is a strategic partner of management.
- In the Peripheral cluster (with mainly CEE countries) HRM has a low status and management-focus.

According to Poór and Milovecz (2011) after these transitional processes, the characteristics of labour market in Central and Eastern European countries are the following:

- Creation of Labour Law covering all aspects of employment first in private, later in public sector, too.

- Ending the egalitarian pay structure as now the pay differentials are common and significant.
- End of the right to work and job entitlement as almost all CEE countries are faced with huge unemployment.
- Restructuring of social welfare systems is needed as now the employers' social security contributions (about 30-35% of the basic pay) are making the relatively cheap labour force expensive.

Based on the data of Cranet survey conducted in 2004 and 2005 in Bulgaria, Czech Republic, Estonia, Hungary, Slovakia and Slovenia Karoliny, Farkas and Poór (2009) identified the similarities in HRM practice in CEE companies. These are the following:

- Staffing (especially managerial selection) relies heavily on the company's internal resources.
- The planning and implementation of training activities is dominated by the HRM department, while the training need identification is mainly line management responsibility.
- The performance appraisal is a widespread activity and used the least for manual works.
- Local establishments have a powerful role in determining the basic pay.
- The proportion of companies with low unionization rate is high.

Long ago CEE region is well-known for its high-educated, competent and innovative but cheap labour force. Poór and Milavec (2011) confirm that investors choose the CEE region not only because of its cheap labour but because of the skilled, blue-collar workforce, engineers, technicians and perceived higher flexibility are also important strengths of this area.

According to Ignjatovic and Svetlik (2003), findings in Northern and Western European clusters the focus is more on internal, in-company training programs and these companies send a larger portion of their employees on training programs than in two other clusters. In the Southern and Peripheral clusters, managers spend more days in training than in the Western or Nordic clusters. On the basis of the recent Cranet survey Karoliny (2010) underlines that there is a slow convergence and improvement in the rate of implementation of up-to-date techniques in training and employee development across CEE region. Especially notable are the good results in several T&D indicators, although the methodology used in their evaluation may be subject to questioning.

### **3. HUMAN RESOURCE MANAGEMENT PRACTICE IN THE RESPONDENT COUNTRIES**

#### **3.1. HRM PRACTICE IN BULGARIA**

Vatchkova (1997) points out that during the transitional period HRM in Bulgarian companies was taken under the strong negative pressure of following external factors:

- the decrease of GDP
- the high inflation rate
- the increase of unemployment, and
- the decrease of living standards and worsening of the quality of life.

In Bulgaria, line managers have significantly more responsibilities for decision making in the HRM field than human resource managers. Flexible staffing practice is not popular. In the field of training, education and qualifications the system approach is not applied.

In 2005 and 2006 Takei and Ito (2007) analyzed HRM practice in Bulgaria surveying middle and middle-upper local managers. According to their research results the main

problems were: poor recognition, unclear career path, unfair performance appraisal, poor information disclosure and sharing, one way communication flow, less participation, unfair rewards and treatment, personal preferences and interests. Based on the obtained results the authors identified the following distinctive success factors for efficient HRM activities:

- fairness, clear rules and structure
- cares, understanding and recognition
- frequent, two-way communication.

Vatchkova (2010) stressed that during the twelve years of participation in Cranet research Bulgarian organizations achieved numerous positive changes in their HRM activities. The majority of organizations have HRM units and HRM managers. There is a drastic improvement of practices for the development of strategic tools and business strategies. There is a change of HRM function from administrative to a strategic partner position. Bulgarian companies use a variety recruiting tools. Besides, there is an improvement in performance-appraisal and T&D practice, as well as in the use of incentives.

### **3.2. HRM PRACTICE IN THE CZECH REPUBLIC**

Koubek (2011) emphasize that before Second World War the Czech Republic had a very developed personnel management system. It was based on regular performance appraisal, compensation system based on performances, developed training and development methods. As a result the aims of the company were harmonized with the workers' aims and the organisations increased the employees' satisfaction and their working conditions. During the communist era the personnel became an administrative function and the decision making process was very centralized.

After the political transition the foreign companies' HRM practice significantly influenced the human resource management practice of local Czech companies', as well. This process was facilitated by modern approach of the well-educated Czech managers. But the development of modern HRM function was not easy. Human resource management was not a priority, the manger turnover was very high and the majority of CEOs did not have HRM education.

According to Cranet results the main trends in the field of human resource management in the 90's were the following:

- the majority of companies had HRM department
- in the majority of companies HRM manager was a member of the Board of the Directors
- the main HRM activity was selection, but as the majority of HRM personal was not competent they engaged external HRM consultants, mainly head-hunters
- interview was the most popular selection technique
- long term incentives were used to motivate managers but without appropriate performance appraisal systems.

Dvorakova (2005) calls attention to the HR policies and practices in public sector and stresses that HRM activities applied by Czech territorial self-government authorities rather lag behind the social need to learn and practice ethical reasoning.

### **3.3. HRM PRACTICE IN HUNGARY**

The economy of Hungary is a medium-sized, structurally, politically and institutionally open economy in Central Europe and is part of the European Union's (EU) single market. Hungary experienced market liberalization in the early 1990s as part of the transition from a socialist economy to a market economy, similarly to most countries in the former Eastern

Bloc. Farkas, Karoliny and Poór (2007) emphasize that the traditional HRM department in Hungary before transitional processes consisted of two parts: one for white collar and other for the blue collar workers. The Hungarian personnel department was supervised by the chief executive manager, who has no control over wages and only little on non-wage benefits. The personnel department was responsible for the traditional personnel functions as selection, carrier management and so on.

Now human resource management departments use various techniques, such as Assessment Centres, and invest significant sources in the process of finding the most appropriate candidates for managerial positions. On the contrary, manual workers are selected by means of more simple and inexpensive methods. One of the features of the Hungarian compensation system is that the base pay of managers is determined on an individual level, while the base pay of manual workers on industry level, based on industry-wide collective bargaining processes.

Karoliny (2010) analyzed the performance appraisal system in Hungarian companies based on the Cranet data from 2005 and 2008. She claims that appraisal is widely used, not only in large companies. However, formal evaluation is mainly used for managers and professional staff. The results of performance appraisal are utilized when identifying training needs, ways of career development and for pay determination.

Farkas, Karoliny and Poór (2011) emphasize that the private and public sector in Hungary have different demands towards human resource management and may learn from each other according to HRM efficiency and modernization.

### **3.4. HRM PRACTICE IN SERBIA**

Milikić, Janićijević and Petković (2008) analyzed the position of HRM in Serbia based on interviews with HRM managers and HRM directors in 38 selected Serbian companies. They have found that the role of HRM function is very weak, but a growing number of companies are introducing HRM departments. The majority of these recently established HRM departments have limited functions – mostly performing administrative tasks. In Serbia the absence of more strategic involvement of HRM is characteristic. According to the cited authors, it is due to the lack of competences of HRM professionals, which is the result of inappropriate HRM education at university level.

Leković and Šušnjar (2009) claim that the majority of HRM responsibilities (staffing, compensation) are in the line managers' authority, but the main responsibility for these HRM issues is, indeed, in the hands of top managers.

Based on Cranet data Slavic, Susnjar, and Poór (2012) claim that in Serbia about 60% of HR directors have a place on the Board of Directors. But it is presumably not a sign of the high significance of HRM, but the result of a functional organizational structure of the majority of the examined companies. The senior HR managers in Serbia are recruited from internal sources; they are usually HR professionals from the HRM department promoted to this position. In the majority of Serbian companies, line managers are primarily responsible for main HR decisions. They make decisions about recruitment and selection, compensation and training and development, as well, alone, even without consultation with the HR managers.

Stangl and Szlávicz (2011) are on opinion that in Serbian companies in the near future the application of various selection techniques and well-planned use of training programs and compensation packages is expected, as well as, the spreading of objective performance appraisal tools.

### **3.5. HRM PRACTICE IN SLOVAKIA**

Letiche (1998) analyzed the modernization of the Slovakian society and pointed out that Slovak companies in 1990s followed opportunistic strategies, which were implicit and not verbalized. Human resources were not viewed in a manner, which transcended profit maximization.

In 2005 and 2006 Takei and Ito (2007) analyzed HRM practice in Slovakia surveying middle and middle-upper local managers. According to their research results the main problems in Slovakian organizations were: poor communication about corporate policies and strategic directions, one way communication, unstructured information channels, poor feedback from supervisors, poor information disclosure and sharing, insufficient information to do work and make decisions, ineffective meetings, unclear and unfair performance appraisal and poor coaching. Based on the obtained results the authors identified the following distinctive success factors for efficient HRM activities:

- fairness, clear rules and structure
- frequent, two-way communication, and
- disclosure, transparency and information sharing.

The research results of Blstakova (2010) show that the importance of performance appraisal is quite stable in Slovak organizations and proves no improvement in this HRM area over the last decade. Nevertheless, Slovak managers slowly began to understand the urgency of systematically composed HRM activities.

Based on the survey data on the human resource management practice of the Slovakian subsidiaries of foreign companies authors Volosin, Poór, Karoliny and Engle (2012) point out the key business issues and trends Slovakian HRM managers have to face with. They are following: efficiency improvement, company development, distribution development and company reorganization.

### **3.6. HRM PRACTICE IN SLOVENIA**

Slovenia was the most developed part of former Yugoslavia. Svetlik et al (2010) claim that foreign companies coming to Slovenia have largely contributed to the spreading of modern human resource management practice. Now in the majority of companies HRM function is treated as an important one. HRM experts have become real partners to company managers. The modern HRM techniques used in market economies are widely used in Slovenian companies. Further development is expected in the field of job analysis and evaluation processes.

Svetlik, Kohont and Farkas (2011) stress out that in Slovenia HRM has a strategic role and it in the same time contributes to the increase of company efficiency and employee satisfaction. External service providers are mainly used in the field of training and development.

Based on Cranet research results Bogičijević-Milikić and Janičijević (2009) state that in Slovenian companies HRM departments are responsible for all human resource management activities (recruiting, selection, training, employee relations, etc). About 80% of companies use performance appraisal systems for evaluation of the work of all types of employees (managers, professionals, clericals and manual workers). The majority of Slovenian companies offer performance related pay, not only for managers, but for clerical, professional and manual workers, too.

## 4. MATERIAL AND METHOD

This current research is based on the Cranet data obtained in 2008/10. The Cranfield Network of International Human Resources Management (Cranet) was established in 1989 is now a collaboration of more than 40 universities and business schools, representing a country from all over the world. In this paper the authors analyze the data of the latest Cranet survey round (2008-2010), when the European sample was created by the respondent companies from 18 EU countries and five other European (Iceland, Norway, Russia, Serbia and Switzerland) countries.

In 2008/10 research period 267 Bulgarian, 54 Czech, 139 Hungarian, 50 Serbian, 225 Slovakian, and 219 Slovenian, id est altogether 954 CEE companies' HR managers filled out the Cranet questionnaire concerning various aspects of HRM function. The respondents of the CEE sample were made of companies mainly from manufacturing and service sector in private ownership, with less than 1000 employees. The EU sample consisted of 3748 companies from 18 countries, while the total European sample from 4189 companies from 23 European states. Beside Europe Cranet has data about HRM practice in USA, Japan, Taiwan, South Africa, Israel, Australia and Philippines, too, but the results of these countries are out of the focus of this current paper.

The standardized Cranet questionnaire consists of six parts: HRM activity in the organization, staffing practices, employee development, compensation and benefits, employee relations and communication and organizational details. The sample is made of HRM managers or people responsible for human resource management activities of companies with more than 50 employees. Since a comprehensive international database with all organizations is still missing, each participating country was in charge of developing a mailing list used for a paper-based and/or online survey.

The sample distribution among the industry classification shows that most of the organizations are in production, manufacturing, and other industrial sectors. The majority of the participating companies is in the private sector and employs fewer than 200 people. For the majority of the sample the main market is either national or world-wide.

The aim of this work is to present and analyze the training practices in Bulgarian, Czech, Hungarian, Serbian, and Slovak and Slovenian companies both by countries and as a particular region average and compare it to practice of companies from all EU respondents and all European region participants averages. The paper will present and analyze data indicating the:

- *importance* of T&D expressed by the ratio of the annual training budget in the total payroll costs,
- *extensiveness* of T&D function, characterized by annual training days per year among different type of employees and the
- *effectiveness* aspect of T&D described by the most often used techniques for evaluating the T&D function.

## 5. DISCUSSION

### 5.1. PROPORTION OF ANNUAL PAYROLL COST SPENT ON TRAINING

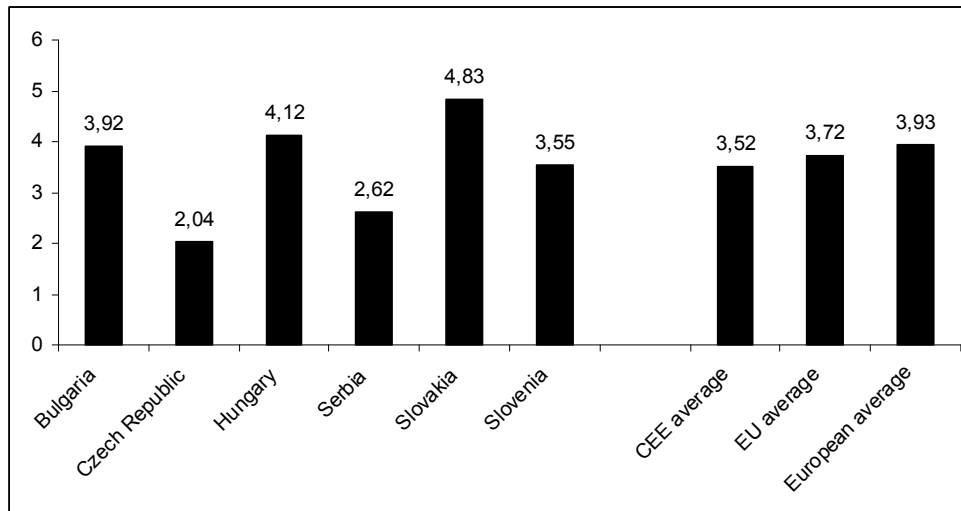
According to the Cranet data, companies in EU countries in average spent 3,72% of their annual payroll cost to training and development, while for European companies this ratio average is a little bit higher: 3,93%. As the individual and average ratios on Figure 1 indicates, the average ratio of this T&D importance indicator in the analyzed CEE countries is

further gap lower, than the EU countries average. In conclusion, the rank of importance of T&D practice is as follows:

- European countries,
- EU countries,
- CEE countries.

Among the examined CEE countries in the 2008-2010 research period majority of the companies spent 2– 5 % of their annual payroll cost to employee training and development programs. The highest average proportion is reported from Slovakia (4,83%) and Hungary (4,12%), while the lowest from Czech Republic (2,04%) and Serbia (2,62%).

**Figure 1: The proportion of annual payroll cost spent on training (%)**



Source: Cranet data and authors' calculation

As a summary, it can be stated that on the one part there is a significant difference among CEE countries in the importance of investments into T&D function, on the other part their average ratio is the lowest in comparison to the rest of the investigated European samples in our analyses.

## 5.2. ANNUAL TRAINING DAYS

The extensiveness of T&D function is characterized by the indicator of training days per year offered for different employee categories. (See Table 1)

**Table 1: Training days per employee**

Country	Employee categories				Average
	Manual	Clerical	Professional	Management	
Bulgaria	7,90	5,75	10,90	7,62	8,04
Czech Republic	3,56	5,35	8,00	8,15	6,26
Hungary	1,98	3,53	6,63	6,81	4,74
Serbia	1,71	6,13	8,16	11,50	6,88
Slovakia	5,50	7,10	10,45	10,11	8,29
Slovenia	6,25	3,89	10,45	7,97	7,14
CEE average	4,48	5,29	9,10	8,69	6,89
EU average	4,14	4,71	7,88	7,20	5,98
Europe average	4,11	4,86	7,88	7,71	6,14

Source: Cranet data and authors' calculation



The rank of extensiveness of T&D is lead by the Slovakian and Bulgarian companies. On average their employees spend more than 8 (8,29 - 8,04 days/year consecutively) days on training. At Slovakian companies not only the management and professional staff members spend considerable amount of time (a little bit more than 10 days) with training, but also the clericals are receiving the highest (7,1) in sample days/year and the 5,5 day offered to manuals is also substantial. In spending time on manual workers training, the highest numbers (7,9 days/year) are reported from the Bulgarian firms, where this indicator is creates the second highest average in CEE sample, with the narrowest standard deviation.

On the bottom of the rank of T&D extensiveness indicator are the Hungarian employees, who in average spend less, than 5 (4,74) days per year on competence-development. This average is hiding a practice, where the members in all the staff categories are receiving the lower in CEE sample time spent on T&D and there is only one country (Serbia 1,71) in this sample, where the manuals are participating with fewer days/year in training courses than in Hungary (1,98). On average the professional staff spend the most time on training, except in Czech Republic, Hungary and Serbia where managers have the most paid days off for training purposes.

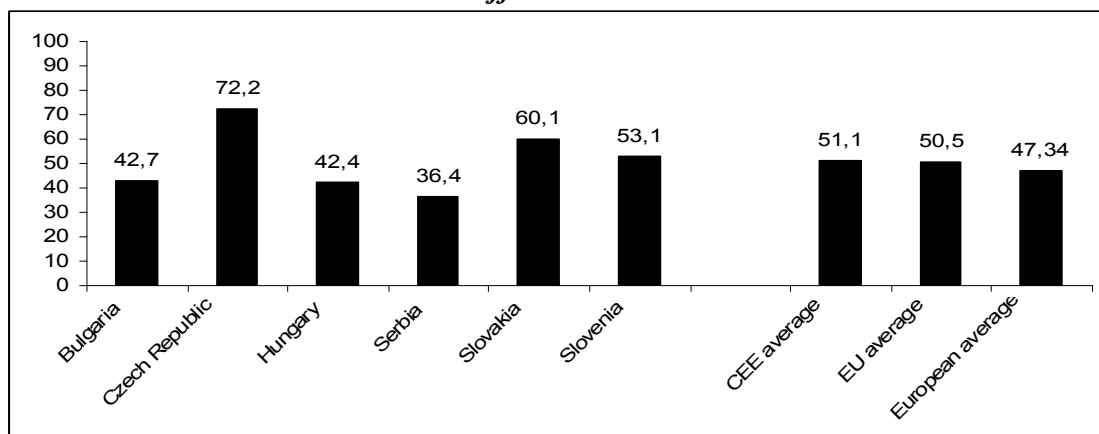
It is interesting to note, that the CEE average (6,89 days/year) of this T&D indicator is the highest among of our analyzed European samples. Namely while the average of all 23 European countries examined hardly exceeds (6,14) the 6 days/year the EU average falls below it (5,98 days/year) . In conclusion the rank of extensiveness of T&D practice is as follows:

- CEE countries,
- European countries,
- EU countries.

### 5.3. THE EVALUATION OF TRAINING EFFECTIVENESS

Figure 2 presents the obtained data on the percentage of organizations who systematically evaluate training effectiveness (Kirkpatrick, 1994). On average less than half (47,34%) of European companies evaluate the effectiveness of their training programs. The value of this indicator for CEE countries is a bit higher (51,1%), while for EU states is in between (50,5%). Among the analyzed CEE countries, there are remarkable differences. In Serbia only 36%, while in Bulgaria and Hungary about 42% of companies evaluate their training programs, while from Czech Republic more than 72% of companies are reporting the usage of systematical training evaluation methods.

**Figure 2: The percentage of organizations systematically evaluating the training effectiveness**



Source: Cranet data and authors' calculation

Table 2 presents the techniques most commonly used for training evaluation.

**Table 2: Techniques used to evaluate training (%)**

	<b>BG</b>	<b>CZ</b>	<b>HU</b>	<b>SRB</b>	<b>SR</b>	<b>SLO</b>	<b>CEE</b>	<b>EU</b>	<b>Europe</b>
Training days	48	60	52	45	57	79	57	52	50
Meeting objective	63	88	86	83	76	87	80	80	78
Evaluation immediately after training	59	94	86	69	73	79	77	83	82
Job performance immediately after training	64	14	28	57	27	23	35	28	31
Job performance several months after training	69	21	30	50	37	37	41	33	33
Feedback from line managers	63	94	90	85	82	88	84	80	80
Feedback from employees	55	79	90	73	77	88	77	77	75
Return on investments	35	19	20	27	16	15	22	15	16

Source: Cranet data and authors' calculation

Based on the obtained data one can conclude that in the CEE region the techniques for the evaluation of training effectiveness can be characterized as mainly informal, because of the rank of these are as follows: feedback from line manager (84%), meeting objectives (80%), evaluation immediately after training (77%) and feedback from employees (77%).

In the countries of the European Union the most frequently used techniques create a bit professional approach about the care for effectiveness of T&D practices. The majority of companies namely use evaluation immediately after training (83%), meeting objective (80%) and feedback from line managers (80%). In the examined European companies the most commonly used techniques are the same as in the EU. Among the analyzed CEE countries, there is a difference in the usage of techniques for evaluation training effectiveness. In Bulgaria, the most common technique is job performance several months after training (69%). In the Czech Republic, the evaluation is immediately after training (94%). In Hungary, the most common evaluation technique is the feedback from the line manager (90%) and employees (90%). In Serbia and Slovakia feedback from the line manager (83% and 82%), while in Slovenia feedback from the line manager and employees are used in the same percent (88%). It must be noted that return on investment (Bohlander and Snell, 2007) is the least commonly used technique in all the CEE countries, just like in the EU and the examined European companies.

## 6. CONCLUSIONS

In the competitive and globalized world, a highly- or multi-skilled, competent labour force becomes vital factor of reaching the organizations' triple-level objectives. Organizations have to focus on different on-site and off-site training programs for all employee categories. It falls within the HRM department's cognizance to analyze the need, design, sometimes execute, and finally evaluate different training programs.

Due to its special context, HRM activities in the CEE region are different from those in the EU countries and even more distant from HRM practices in the US. The HRM tradition, economic and social situation and present HRM practice and Bulgaria, the Czech Republic, Hungary, Serbia, Slovakia and Slovenia is rather different. In Bulgaria, there is change towards a strategic role of human resource management function. HR managers use the variety of modern HRM tools. In the Czech Republic, the foreign companies had a positive influence on the development of HRM approach, but there is still place for improvement. In

Hungary companies use modern HRM tools but there is still a significant difference between HRM practice towards managers and workers. In Serbia, the negative pressure from external environment and the elements of national culture made the development of modern HRM approach difficult. However, there are positive examples of the application of HRM principles and tools. In Slovakia, there are still serious problems in the human resource management field, but managers slowly understand the importance of the appropriate HRM approach. In Slovenia HRM function is treated as being as important as it deserves to be. In the majority of companies, human resource managers are the strategic partners of the corporate leaders and significantly contribute to the companies' success and employees' satisfaction. Multinational companies and other organizations tending to cooperate with CEE partners have to be aware of the specialties of HRM activities in former socialist countries.

In this paper, the authors focused on the training activity of companies from six CEE countries: Bulgaria, Czech Republic, Hungary, Serbia, Slovakia and Slovenia based on the Cranet research data from 2008/10. The archetype companies from these CEE countries spend between two and five percentages of their annual payroll costs on training. The CEE average is 3,52% – a bit behind the EU and European average of about 4%. Companies in the Czech Republic and Serbia spend about 2% for training purposes, while in Slovakia employers are more generous as they invest almost 5 % of payroll costs on training. It can be stated that the importance of T&D activity expressed by the annual training budget is the lowest in CEE region compared to EU and other European countries examined. In the same time, there are significant differences among the six CEE countries in this aspect.

On average the employees spend seven days on training in CEE, which is very similar to the EU and European value of six days. In Bulgaria, Slovakia and Slovenia professional staff, while in Hungary, Serbia and the Czech Republic managers spend the most time on training programs. The extensiveness of T&D activity is the highest in CEE region compared to EU and examined European companies. The effectiveness of T&D function is low, as on average only 51% of analyzed companies in CEE region systematically evaluate their training programs. In Serbia, Bulgaria and Hungary this indicator is about 40%, while in the Czech Republic it is more than 70%. In CEE region the T&D evaluation is mainly informal, as the most common methods are feedback from the line manager, meeting objectives, evaluation immediately after training and feedback from employees.

Even though in all six CEE countries the modern HRM approach is accepted, there is still space for development. Improving the importance and extensiveness of training activity as well as its effectiveness may contribute to the more effective organizational knowledge acquisition, to the more advanced HRM activities and to the companies' overall success, too.

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*Monika Zajkowska*

### 3.8 INNOVATION SUPPORT FROM R&D INSTITUTIONS IN SMALL AND MEDIUM-SIZED ENTERPRISES IN THE BALTIC SEA REGION

**Summary:** The paper presents the importance of the cooperation between research and development institutions and the small and medium-sized enterprises (SMEs) in the process of creation the innovation. This paper is based on the research carried out in March/April 2011. 542 enterprises from 9 Baltic Sea Region (BSR) countries took part in the study: Latvia, Sweden, Estonia, Finland, Norway, Lithuania, Germany, Russia, and Poland. The aim of the study was to analyze the actual innovation support from R&D institution for SMEs from the Baltic Sea Region. Research activities of this study include: the evaluation of barriers in innovation implementation in Baltic Sea Region enterprises, the study of SMEs cooperation with scientific subjects, R&D sphere; and the identification of the needs of enterprises to do with the increase of their innovation capacities such as: demand for training, consulting, cooperation with universities and R&D sphere, or cooperation in a cluster.

Partnership with R&D institutions is vital especially for SME's, which have fewer employees and a smaller financial potential. Unlike major companies, SMEs do not have own R&D departments, but need external services tailored to their needs. During last years SMEs in Baltic Sea Region have been massively improving the efficiency through cost reduction, business process re-engineering etc. SMEs need innovations and qualifications which requires an intensive cooperation with science. By an improved this cooperation, transfer of technologies and knowledge can be been fortified lastingly and used development potentials.

**Keywords:** SMEs, innovation, R&D institutions

## 1. INTRODUCTION

The Baltic Sea Region covers the area consisting of eleven countries: Denmark, Estonia, Finland, Germany (with the following lands: Berlin, Brandenburg, Bremen, Hamburg, Maklenburg – West Pomerania, Schleswig-Holstein and Low Saxony), Latvia, Lithuania, Poland, Sweden, Belarus, Norway and Russia (Sankt Petersburg and Leningrad Region, Karelia Republic, Kaliningrad, Murmansk, Novogrod and Pskov regions). With the increasing integration of world, economy becomes increasingly important competitive of small and medium-sized businesses globally. One way to counter the increased competition is creating innovation and translating it into useful applications for the market (Organisation for Economic Co-operation and Development (OECD), 2010).

The most important priority of the Baltic Sea Region strategy focuses on generating, supporting and distribution of innovation in the region. It supports activities designed to help innovation development of natural and technical sciences as well as chosen non-technical sciences such as business services and design (Portal Funduszy Europejskich, <http://www.ewt.gov.pl>, April 2012). Activities in this priority should analyze and increase the efficiency of the sources of innovation and their relationships with small and medium-sized enterprises (SMEs). They should also facilitate transnational technology and scientific transfer as well as increase the possibilities of generating knowledge and its absorption by different social groups.

## 2. THE AIM AND SCOPE OF THE STUDY

Enterprises from 9 Baltic Sea Region countries took part in the study. As a result of the study 542 filled-in questionnaires were gathered, among which 2 came from Latvia, 3 from Sweden, 11 from Estonia, 4 from Finland, 25 from Norway, 24 from Lithuania, 16 from Germany, 11 from Russia and 446 from Poland. The survey was conducted in March/April 2011. The questionnaires completed by Polish entrepreneurs amounted to 82,3% of the total number of all gathered questionnaires. For this reason, the analysis contained in this report concerning the need of enterprises for innovation support is based mainly on the answers given by the Polish entrepreneurs. These results were compared, where possible, with the results obtained from enterprises coming from chosen Baltic Sea Region countries (Norway, Lithuania, Germany, and Russia) where the largest number of completed questionnaires was gathered during the study. However, the sample of enterprises chosen for the study was not representative. Moreover, the research group did not define a desired structure of such a sample. The conducted research was then of a tentative type only and its conclusions should be interpreted in this light.

The aim of the study was to analyze the actual innovation support from R&D institution for SMEs from the Baltic Sea Region. Research activities of this study include: the evaluation of barriers in innovation implementation in Baltic Sea Region enterprises, the study of SMEs cooperation with scientific subjects, R&D sphere; and the identification of the needs of enterprises to do with the increase of their innovation capacities such as: demand for training, consulting, cooperation with universities and R&D sphere, or cooperation in a cluster.

The results of the conducted study can help formulate recommendations designed to increase innovation and competitiveness of SMEs from Baltic Sea Region in the future. Today, it seems, it is well understood that effective and dynamic innovation processes in economy are interactive and they require cooperation of many business subjects and institutions from business environment.

### 2.1. DESCRIPTION OF THE ANALYZED ENTERPRISES

446 Polish enterprises took part in the study. Service enterprises constitute the biggest share (44%) in the analyzed group. They are followed by trade companies (36%). 8 out of each 10 analyzed Polish enterprises are from trade and service sectors. Predominantly they come from the following sectors: food, clothing, shoe and automobile industries, and cosmetic services.

The structure of the analyzed enterprises according to the sectors they come from is quite similar in the remaining Baltic Sea region countries (see table 1). In all the analyzed countries, enterprises from service and trade sectors constituted 3/4 of the group.

*Table 1: The structure of the analyzed enterprises from Norway, Lithuania, Germany and Russia, according to the sector (in %)*

Sector	Norway	Lithuania	Germany	Russia
services	52	42	38	66
trade	28	35	33	21
production	14	16	19	7
mixed	6	6	10	7

Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

The sector structure of the analyzed Polish enterprises is consistent with general sectoral characteristics of SMEs. SMEs in Poland are to be found in all sectors of economy, but they dominate in service sector. The market share of microenterprises is especially big in the following sectors: real estate (98%), transportation (98%), trade (97%), construction (96%), hotel and gastronomy (95%) and fishing (95%).

Microenterprises employing from 1 to 9 people yearly account for (67%) of all enterprises in the analyzed sample of Polish enterprises. Small enterprises, employing from 10 to 49 people amount to 20% of this number and medium-sized enterprises constitute only 7% of all the analyzed enterprises. Predominance of microenterprises over small and medium-sized enterprises in the analyzed sample of the SMEs is evident, yet it is a typical phenomenon for Polish economy, for according to GUS and PARP, microenterprises (employing maximum 9 people) amount to about 95% of all private enterprises in Poland (3,6 million). Small and medium-sized enterprises account for the remaining 5 %. Mean employment in a Polish enterprise amounts to 5 employees [Główny Urząd Statystyczny (GUS), 2011]. Polish SMEs are dominated by microenterprises more than other SMEs from the Baltic Sea region countries.

Microenterprises are also dominant in the remaining Baltic Sea region countries of the analyzed group. In Norway and Germany they constitute 1/2 of the analyzed enterprises, and more than 1/3 in Lithuania and Russia. In Norway and Germany 8 out of 10 analyzed enterprises employed up to 49 people, whereas in Lithuania and Russia 7 out of 10 enterprises belong to micro and small enterprises. In these countries, a larger representation of medium-sized enterprises is to be found in the analyzed group, compared to the group of the Polish enterprises.

**Table 2: The structure of the analyzed enterprises from Norway, Lithuania, Germany and Russia, according to the employment (in %)**

Employment	Norway	Lithuania	Germany	Russia
1 to 9	52	33,3	50	36,4
10-49	32	33,3	31,3	27,3
50-249	16	29,2	18,8	27,3
over 250	0	4,2	0	9,1

Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

Since the analyzed group in all countries in this study is composed mainly of micro and small enterprises, their age is an important factor. Start-ups and new enterprises, whose main problem is the survival on the market look at the issue of support and development of innovation differently compared to a mature, stable enterprise whose task is to gain its competitive edge on the market. In the analyzed group of the Polish enterprises, 7 out of 10 are stable companies, which have been on the market for more than 5 years. A similar ratio is to be found for the analyzed group of the Lithuanian, German and Russian enterprises. The group of the Norwegian enterprises stands out in this respect since 96% of them have been on the market for more than 10 years. To sum up, the analyzed group of the enterprises from all the countries is composed mainly of mature and stable companies.

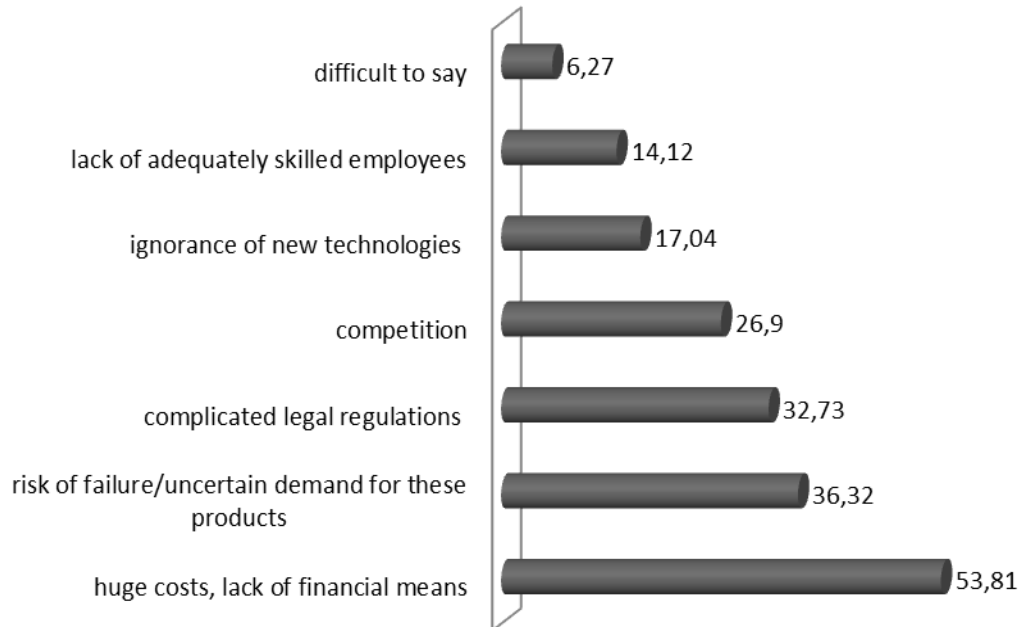
### 3. BARRIERS IN INNOVATIONS IMPLEMENTATION

An important issue for the assessment of innovation potential of the Baltic Sea Region SMEs is specifying factors, which influence the increase of innovation activity. Identification and abolishment of barriers, which restrict the implementation of innovation into the market,



seems important. When asked about barriers they encounter when implementing innovations, the enterprises have mentioned problems that can be found in the literature devoted to innovations in SMEs. For more than a half of the Polish SMEs insufficient funds are the major difficulty in innovation activities.

**Figure 1: Barriers in implementation of innovation according to Polish SMEs (in %)**



Source: own study, data: N for Poland=446, note: enterprises could choose up to 8 answers

According to GUS research, the main source of financing innovations in SMEs is their own financial means (74,75%), and bank loans amount to 22% only in this respect. For 1/3 of the Polish SMEs risk of investment failure in innovations, and uncertain demand for new products constitute a major problem. A smaller fraction of the analyzed Polish SMEs (32% enterprises) have pointed at too complicated legal regulations as a major obstacle in their innovation activity.

Similarly, the analyzed SMEs in Norway, Germany, Lithuania and Russia claimed insufficient financial means was a major barrier for them. This was a problem for 64% of the Norwegian companies, 66,7% of the Lithuanian companies, 68,7% of the German companies and 46,7% SMEs from Russia. Complicated procedures in innovations implementation, lack of qualified employees and existing market competition have also been an issue.

The conducted research has allowed to bring to light some specific barriers in innovations implementation in each of the analyzed countries. These barriers are important for one specific country and are not for others; i.e. for the Polish and Lithuanian SMEs it is uncertainty of investments in innovations, for the Norwegian enterprises competition and for the German SMEs lack of properly qualified staff.

#### **4. SMEs CONTACTS WITH SCIENTIFIC, R&D, AND OTHER INSTITUTIONS**

In modern highly competitive economy the ability and intensity of cooperation on innovations has taken on a particular importance. This cooperation is vital especially for SMEs, which have fewer employees and a smaller financial potential. This analysis of SMEs, as far as innovations are concerned, indicates that a role of a leading partner is played by local authorities, chambers of commerce, chambers of crafts and entrepreneurs' associations.

As much as 12,6 % of the Polish SMEs have cooperated with local authorities. A cooperation with other enterprises is a common denominator for the analyzed SMEs. 26,2% of the SMEs have declared such a cooperation. It is worth mentioning that cooperation between enterprises is especially important, since according to numerous studies, a number of enterprises, which have permanent business contacts with other companies, is strongly correlated with their innovation activity. Contacts with R&D institutions are a particularly important type of cooperation from the point of view of innovation potential increase. It is due to the fact that SMEs seldom engage in R&D on account of high costs of such an ventures, lack of qualified staff, and lack of necessary equipment. Only 16,37% of the Polish SMEs could boast of a current cooperation with scientific and R&D institutions. It can be inferred than that the majority of implemented innovative solutions in the surveyed SMEs is a result of their own effort, without resorting to cooperation with scientific centres and R&D institutions.

**Table 3: The Baltic Sea Region SMEs cooperation on innovations until present (in %)**

	<b>Poland</b>	<b>Norway</b>	<b>Lithuania</b>	<b>Germany</b>	<b>Russia</b>
Local authorities	12,6	44	37,5	56,3	36,4
Local administration	9,8	24	25,8	25	18,6
Consulting companies	9,8	4	0	25	27,3
Financial institutions	9,6	4	58,3	25	0
Business support institutions	7,8	4	12,5	12,5	36,4
Universities	5,8	8	33,3	31,3	27,3
R&D institutions	2,2	24	25	12,5	18,2
Other entrepreneurs	26,2	16	16,6	37,5	9,1

Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

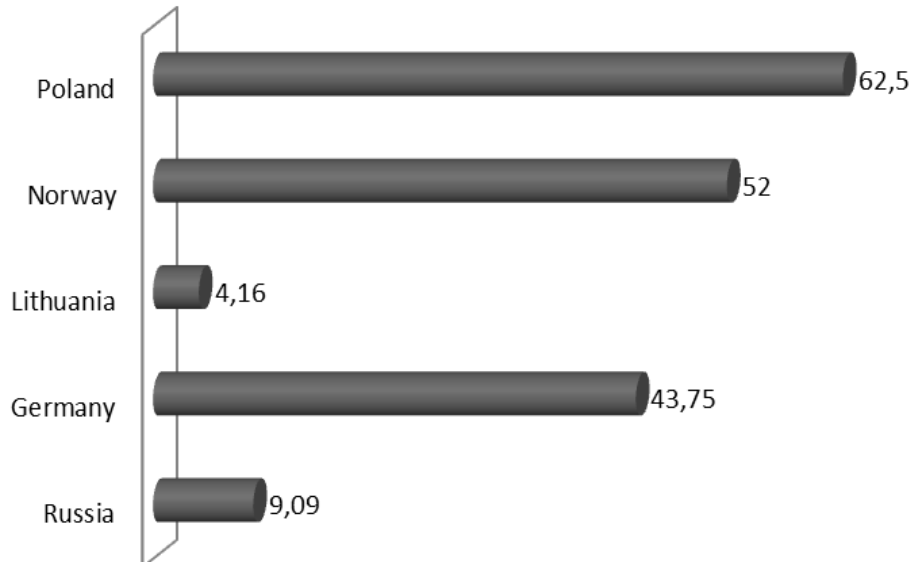
As much as 56,3% of the German, 44% of the Norwegian, 37,5% of the Lithuanian and 36,4% of the Russian SMEs have cooperated with local authorities. As for the Polish SMEs, only 12,6% have done it. A cooperation with other enterprises is a common denominator for the Polish and German SMEs. 26,2% of the Polish and 37,5% of the German SMEs have declared such a cooperation. It is worth mentioning that cooperation between enterprises is especially important, since according to numerous studies, a number of enterprises, which have permanent business contacts with other companies, is strongly correlated with their innovation activity. In the analyzed SMEs, the SMEs from Lithuania, Germany and Russia stand out in this respect. In these countries, a substantial fraction of SMEs have cooperated on innovations with different institutions. In Lithuania 58,3 % of the SMEs have cooperated with financial institutions, and 36,4% of the SMEs in Russia have cooperated with business support institutions.

The conducted research shows that universities are the most frequently chosen R&D partner by the Baltic Sea Region SMEs. More than a half of the Lithuanian SMEs, 44% of the German SMEs and more than a third of the Russian SMEs have permanently cooperated with universities when this research was done. Poland is no exception in this respect even though only 5,6% of the analyzed Polish SMEs have cooperated with universities. Generally, Polish SMEs cooperate much less intensely with R&D institutions in comparison with SMEs from the remaining countries. Apart from cooperation with universities, a specific type of specialization of the Baltic Sea Region SMEs and R&D institutions looms large. As much as 40% of the Norwegian SMEs have cooperated with a cluster, 33,3% of the Lithuanian and 25% of the German SMEs have cooperated with scientific and R&D institutions, and 27,3% of the Russian SMEs have cooperated with technology transfer centres when this research was done.

#### 4.1. TYPES OF CONDUCTED R&D ACTIVITIES

As it has already been mentioned SMEs rarely engage in R&D activities. In Poland SMEs which occasionally conduct R&D research account for 3,8% of all SMEs, and only 1,85% of the Polish SMEs can boast of a permanent activity of this type (Żołnierski, 2008).

*Figure 2: A number of the analyzed SMEs, which are not engaged in R&D (in %)*



Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

In the analyzed Polish SMEs, a fraction of companies which have not been engaged in R&D is very high and amounts to 62,5% of all analyzed enterprises. Similarly, a half of the analyzed Norwegian and German enterprises have not been engaged in any R&D activity when this study was conducted. The only exception to this rule are the Russian and Lithuanian SMEs where 9 out of 10 enterprises have been engaged in R&D activities.

A predominant kind of R&D conducted by the Baltic Sea Region SMEs concerns enhancements in production and services. This kind of activity has been conducted by 1/4 of the Polish SMEs, over 1/3 of the Lithuanian and German SMEs, 44% of the Norwegian SMEs, and more than a half of the Russian SMEs.

Cooperation with scientific co-operation is relatively easy, requiring long-term planning tasks, which to be made by the unit. However, research shows that in the presence of missing the initiative private institutions research laboratories, with which the firms have pursued the implementation of innovative tasks, which may improve the competitiveness and quality of services offered by universities, which – as they consider respondents – significantly simplify collaboration with universities and the struggle against bureaucracy.

#### 4.2. BARRIERS IN COOPERATION BETWEEN SMEs AND SCIENTIFIC INSTITUTIONS

On account of a relatively poor cooperation of the Baltic Sea Region SMEs with R&D institutions, the author of this paper have undertaken a task of identifying problems in SMEs and R&D institutions cooperation. A majority of the analyzed SMEs have come across a proposal of cooperation on behalf of a scientific institution (89% of the Polish SMEs, about 72% of the Norwegian SMEs, and about 66% of the German and Russian SMEs). Lithuania stands out as an exception with only 50% of the companies declaring such contacts. It turns

out, however, that 9 out of 10 of all the analyzed firms can see barriers in cooperation with scientific institutions. Basing on the completed questionnaires, it can be inferred that the main barrier preventing such a cooperation is a limited financial potential of the SMEs.

**Table 4: Barriers preventing cooperation between SMEs and R&D institutions (in %)**

	Poland	Norway	Lithuania	Germany	Russia
substantial costs, financial barriers	41	76	50	37,5	54,5
difficulties with starting a cooperation	28,5	32	33,3	31,2	36,3
lack of interest of R&D institutions to start a cooperation	19,7	28	41,7	18,7	18,8
R&D representatives do not understand the issue	18,4	64	45,8	25	27,3
legal barriers	17,9	4	8,3	x	x
no barriers	11,4	8	x	6,3	18,2
communication problems with R&D representatives	10,3	36	29,16	12,5	x

Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

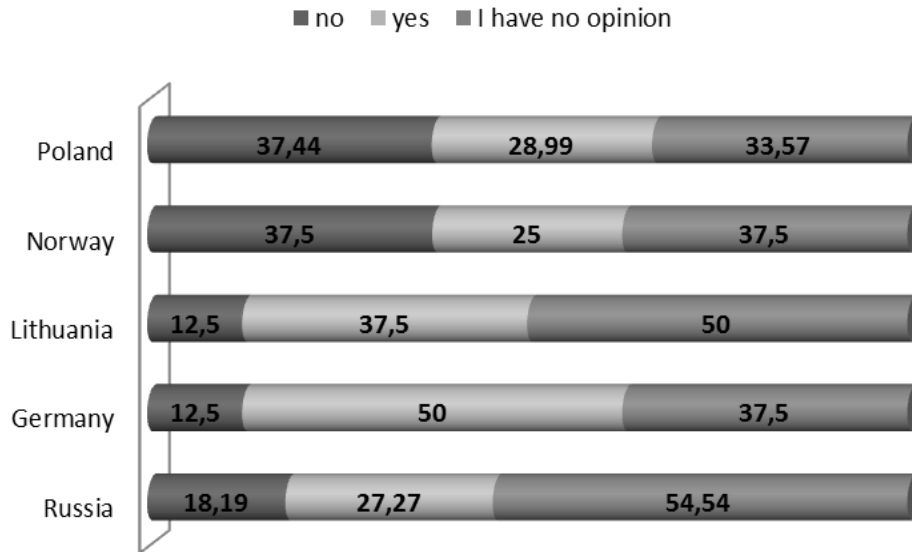
This problem is due to limited financial resources of the enterprises for joint research as well as a difficult access to external financing of R&D projects carried out together with R&D institutions. It should be noticed, however, that SMEs believe that a low intensity of cooperation with R&D institutions is caused by R&D institutions themselves. About 1/3 of the analyzed companies have encountered problems with starting a cooperation with scientific institutions. On average 1 in 5 of the analyzed SMEs has shown a lack of interest on behalf of the scientific institution to initiate a cooperation with enterprises on R&D projects. Moreover, a substantial fraction of the analyzed companies (64% from Norway, 46% from Lithuania, 25% from Germany and Russia, and 4% from Poland) have declared that representatives from R&D institutions ignore economic matters, which prevents or limits a possible cooperation.

## 5. DEMAND FOR R&D IN SMEs

One of the fundamental objectives of this report is to estimate the demand for innovation of the Baltic Sea Region SMEs. To do this, a potential demand for R&D in SMEs has been analyzed in the first place. It turns out that 2/3 of the Lithuanian and Russian SMEs over 1/2 of the Norwegian SMEs and 43,7% of the analyzed German enterprises need R&D. Polish SMEs do not do well in this respect, because only 1 from the 3 Polish enterprises declares a demand for R&D in their company.

Moreover, 1/4 of the German, Lithuanian, Norwegian and Polish enterprises on average, do not have any opinion about possible demand for R&D in the future. It probably indicates that the analyzed SMEs do not quite understand what underlies innovative solutions creation in company, because they do not understand the importance of R&D. It is obvious that understanding and verbalizing a demand for R&D is only a first step in planning innovation processes in the company. A company can understand the necessity of R&D to increase the level of innovation, yet because of some restricting conditions, it will not intend to engage in any R&D activity. This is why the next step in this research was to analyze the Baltic Sea Region SMEs' intentions to engage in and order R&D or to buy their results in the future.

**Figure 3: SMEs intentions to engage in or order R&D or to buy their results (in %)**



Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

Therefore, the next step in this research was to analyze the SMEs' intentions to engage in and order R&D or to buy their results in the future. It turns out that a number of the Lithuanian, Norwegian, and Russian enterprises declaring readiness to engage in, order or buy R&D is twice smaller than a number of the SMEs in these countries, which declare a demand for R&D. Only in Poland and Germany a demand for and a potential supply of R&D go hand in hand.

A substantial number of the analyzed companies, which do not have any specific plans to engage in, order or buy R&D indicates that SMEs are hesitant about incorporation of potential R&D projects. As 1/2 of the Lithuanian and Russian SMEs and over 1/3 of the SMEs from Germany, Norway and Poland do not have any opinion about running, ordering or buying R&D projects. It is probably due to barriers in R&D implementation in SMEs mentioned before.

### **5.1. SMEs DEMAND FOR INNOVATION SUPPORT FROM UNIVERSITIES**

In this study, an attempt has been made to identify the scope and type of innovation support SMEs require from scientific institutions. A demand for a specific sort of support from universities is much smaller than the analyzed demand for R&D. In the majority of the analyzed countries, an interest in a specific kind of support has been declared on average by 1/3 of the total number of the SMEs. The entrepreneurs have been mostly interested in periodical trainings and workshops for companies preparing and realizing innovative projects. A demand for this kind of support has been declared by more than a half of the Norwegian and Lithuanian enterprises, about 1/3 of the Polish and Russian companies and 1/5 of the German SMEs. 1 in 3 SMEs from Poland, Lithuania and Germany, 42% of the Norwegian SMEs and close to 3/4 of the Russian SMEs have shown interest in information meeting concerning a specific types and kinds of innovations.

Moreover, entrepreneurs have shown a potential interest in individual consulting services directly in their companies. This form of support has been of interest to 2/3 of the Lithuanian SMEs, over 1/3 of the Norwegian enterprises and to every fifth company from Poland, Germany and Russia.

The analysis of potential benefits, which SMEs can expect from the cooperation with scientific institutions, can lead to interesting conclusions. Only few analyzed SMEs can see potential benefits, which can result from such a cooperation.

**Table 5: SMEs demand for innovation support from universities (in %)**

	Poland	Norway	Lithuania	Germany	Russia
periodical trainings and workshops for persons preparing and realizing innovative projects	35,5	58,3	50	20	36,6
information meetings on types and kinds of innovations	30,7	41,6	37,5	33,3	72,3
allowing access to practical training and didactical materials	22,6	16,7	16,7	20	36,4
individual consulting directly in the company	22,6	37,5	62,5	26,7	18,2
individual consulting via e-mail	11,5	16,7	16,7	x	x
individual consulting by phone	7,3	20,8	16,7	x	x

Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

The smallest number of SMEs which have a positive opinion on a cooperation with universities is to be found in Poland (22% on average), and the biggest in Lithuania (48% on average). Generally according to the opinion expressed by the majority of SMEs, benefits from the analyzed cooperation are different in each country. The only common benefit coming from the cooperation with universities that a substantial number of SMEs from all the countries have agreed upon is “launching new products and services”. This is the most important benefit for the Polish, German and Russian SMEs. It is also highly valued in Lithuania (62,5%) and in Norway (44%).

Moreover, the Polish SMEs look at a cooperation with universities as a means of boosting sales, getting new customers and increasing their market share. The Norwegian SMEs expect this cooperation to result in enhancing the quality of their products and reducing costs. The Lithuanian SMEs emphasize cost reduction and new technology implementation as a potential benefit from such a cooperation, whereas the German SMEs expect to improve the quality of their products and services and to get access to the latest know-how. Finally, the Russian SMEs expect to improve the quality of their products and services and to enhance organization in the company.

Apart from the demand for R&D, the author of this article has analyzed the Baltic Sea Region SMEs in terms of their demand for training and consulting services from scientific circles. Moreover, the author has tried to specify which barriers impede a possible cooperation between entrepreneurs and scientists. It turns out that a substantial number of the SMEs are interested in this kind of support. As many as 9 out of 10 of the analyzed Polish and Russian SMEs 3/4 of the Lithuanian companies and over 2/3 of the Norwegian and German SMEs have declared readiness to participate in trainings and a demand for consulting services on cooperation from scientific circles.

Moreover, the enterprises taking part in this study, have been asked to specify what they would like to cooperate with universities on? It turns out, that in all the analyzed SMEs have pointed at 3 common subjects that are of interest to them in view of a possible cooperation: services, products and new technologies. Almost 2/3 of the Lithuanian SMEs, about 48% of the Russian SMEs, 40% of the Polish and Norwegian SMEs and 1 in 3 German SMEs have declared a need for such a cooperation. Only 1 in 5 from Poland and Russia and 1 in 4 SMEs

from Lithuania, Norway and Germany has been interested in cooperation concerning the improvement of internal process in the company and staff development.

**Table 6: Expected benefits SMEs can get resulted by their R&D cooperation with universities (in %)**

	Poland	Norway	Lithuania	Germany	Russia
launching new products/services	38,1	44	62,5	50	81,8
sales increase	33,8	52	58,3	25	27,3
improvement of cooperation with suppliers and customers	30,7	48	25	31,2	27,3
gaining new customers/increasing market share	30,2	40	45,8	25	45,4
increase of company's prestige	27,3	52	45,8	37,5	36,3
costs lowering	27,1	56	75	31,2	27,3
enhancing products/services quality	21,3	60	54,1	50	63,6
optimalization of organization operations	20,1	20	37,5	43,7	45,4
access to latest know-how	17,9	44	25	50	27,3
improvement of competitive position	17,7	28	58,3	32,5	45,4
increase of company's profitability	17,3	52	45,8	25	27,3
possibilities of new innovations implementations	16,1	16	62,5	31,2	27,3
possibilities of HR development	9,6	16	33,3	25	9,09
increase of ecological activity	7,8	24	41,6	18,7	x

Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

SMEs are driven by cash flow and getting products quickly to market, which requires rapid decision-making and actions. Universities, on the other hand, are driven by other imperatives and they must follow institutional procedures, meaning that in commercial dealings with SMEs the parties are likely to frustrate each other. They sometimes feel obliged to extract the maximum financial benefit, while SMEs are generally unwilling and/or unable to pay large amounts for formal knowledge.

Universities tend to be more process driven and formal in their dealings, emphasizing intellectual property and contracts. It seems that SMEs prefer relationships with individuals versus institutions, seeking to bypass formal structures at universities to deal directly with researchers who they respect and trust.

SMEs also appear to adopt a more market-oriented view, valuing adaptation and incremental innovation of existing products and ideas with proven market potential rather than big breakthroughs which they are generally not resourced to pursue. Universities, on the other hand, appear more interested in 'blue skies' research and ideas-driven radical innovations which may, or may not, have commercial applications.

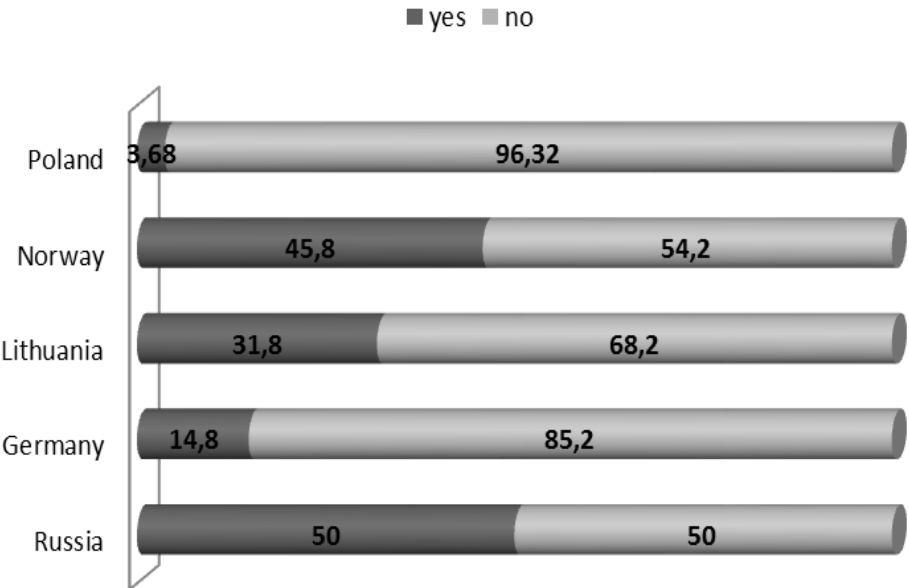
## 6. SMEs DEMAND FOR CLUSTER PARTICIPATION

Cluster is defined as a geographical concentration of reciprocally interrelated companies, specialized suppliers, service suppliers, companies operating in related sectors and relevant institutions (i.e. universities, normalization organizations and sectoral associations) which cooperate and compete with one another in particular fields'. The research on clusters carried out so far has shown that there are substantial economic benefits resulting from cluster activities, both for the economy and companies operating in the cluster. From a micro-scale

point of view, companies operating in a cluster can inexpensively get information about the environment, properly assess their capacities, get a better access to suppliers and companies providing specialized services and specialized work market. More importantly, however, the existence of clusters fosters intellectual capital growth in companies, which are gathered in them. Consequently, this growth spurs technological transfer and facilitates innovation implementation in companies in a cluster. Therefore, companies operating in clusters have a higher level of innovation than enterprises which do not belong to any cluster organization.

In the light of this, the authors of this report have decided to analyze to which extent the Baltic Sea Region SMEs are engaged in cluster cooperation concerning innovation. It turns out that the majority of the analyzed companies could not boast of any cluster membership. This is true for 96,3% of the Polish companies, about 1/2 of the Russian and Norwegian SMEs, 1/3 of the Lithuanian SMEs and 14,8% of the German SMEs. The above results show a relatively low level of SMEs involvement in this kind of cooperation.

**Figure 4: SMEs membership in innovation clusters (in %)**



Source: own study

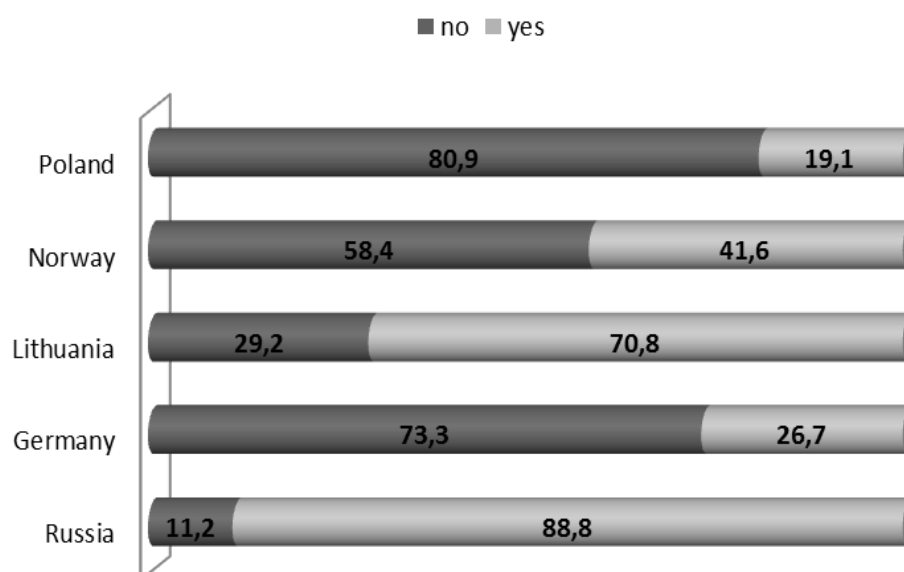
Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

As competitiveness increases in all sectors of the economy in the Baltic Sea Region, different forms of associations and cooperation loom large as a means of SMEs growth and survival. Cluster organizations have become vital in this respect. For this reason, SMEs have been analyzed in view of a potential cluster cooperation in the future. The results of this study are not optimistic. As much as 81% of the Polish, 73% of the German and 58,4% of the Norwegian SMEs have declared no intention to cooperate in a cluster. The Lithuanian and Russian SMEs are an exception in this respect, since 70,8% of the Lithuanian companies and 88,8% of the Russian SMEs have declared interest in cluster ventures as a means of improving their innovation and competitiveness.

Generally, these results indicate that it is necessary to undertake intense activity to increase SMEs' understanding of benefits flowing from mutual cooperation in a cluster.



**Figure 5: SMEs' willingness to cooperate in cluster ventures (in %)**



Source: own study

Data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

When inquired about potential activities, that they could undertake in cluster ventures, the SMEs point to different possible activities.

**Table 7: Kinds of intended SMEs activities in cluster ventures (in %)**

	Poland	Norway	Lithuania	Germany	Russia
joint R&D	8,9	8	41,6	6,25	36,3
knowledge and technology acquisition	11,9	16	20,8	12,5	9,09
equipment acquisition	19,9	16	16,6	6,25	x
joint initiatives in innovations	13,7	24	50	x	45,4
joint market offer/joint marketing operations	15,2	32	20,8	12,5	27,3
training and consulting services for cluster members	13,9	24	33,3	12,5	36,3
joint market analyses and studies	14,1	20	20,8	12,5	72,7
initiating cooperation and regional experience sharing	9,1	72	33,3	37,5	18,2
starting a cooperation and sharing experience on the international level	7,6	4	37,5	18,75	27,3

Source: own study, data: N for Norway=25, N for Lithuania=24, N for Germany=16, N for Russia=11

Very few Polish SMEs have declared an intention to undertake well-defined activities in a cluster. 72% of the Norwegian and 37,5% of the German SMEs have been keen to initiate a cooperation and to exchange experience in the region. 50% of the Lithuanian SMEs have declared readiness to conduct joint innovation ventures, 41,6% of the SMEs have been interested in R&D ventures and 37,5% of the SMEs have shown interest to initiate a cooperation and exchange experience internationally. The Russian SMEs have been willing to participate in joint market analyses (72,7%), joint innovative initiatives (45,4%), and joint R&D ventures (36,3%). Generally, the more willing SMEs are to participate in a cluster venture (i.e. the Russian, Lithuanian, Norwegian SMEs), the higher intensity of intended ventures in a cluster is.

Moreover, the study has shown that about 90% of the analyzed SMEs can see barriers impeding cooperation with scientific institutions. The major barrier SMEs encounter is insufficient proper funds to finance R&D and difficulties with access to external financing. However, according to the SMEs, the reasons for low intensity of cooperation with R&D sphere are scientific institutions themselves - SMEs report difficulties with initiating a cooperation with scientific institutions, a lack of interest of these institutions to involve in such a cooperation, and ignorance of the economic subject matter on behalf of these institutions' representatives. An attempt has been made to assess the demand for innovation in SMEs when analyzing the Baltic Sea Region SMEs' innovation potential and their cooperation with R&D sphere.

## 7. CONCLUSIONS

The role, which SMEs play in the economy of the Baltic Sea Region makes creating adequate conditions for their innovation and competitiveness growth a key challenge. For this reason, it is vital to broaden our knowledge of the level of SMEs innovation and to gather data on a demand for innovation support in SMEs - the task that the authors of this report have undertaken.

The sample of the analyzed SMEs consisted of 542 companies from 9 Baltic Region countries and had a large overrepresentation of commercial and service companies as well as mature small and medium-size enterprises (which have been on the market for over 10 years). Because of the fact that the sample of the enterprises used in the study was not representative, the results are not representative either.

In the study, the Baltic Sea region entrepreneurs have been asked to specify a kind and a degree of intensity of innovation changes implemented in their companies. It turns out that marketing and product innovations are most frequent. Moreover, an innovation climate based on openness in organization culture in these companies has proved to be an important factor in innovation implementation in the majority of the analyzed SMEs. SMEs in general have a bad opinion about the innovation climate in the country in which they operate. A difficult access to financing innovation activities by financial institutions is a common problem with building a friendly innovation climate in all the analyzed countries. Major problems, which SMEs struggle with in innovation implementation, are: lack of financial resources, complicated legal procedures, and a deficiency of adequately qualified staff.

While small and medium-sized enterprises face many challenges, effective collaboration with R&D institutions can provide access to ideas and resources that can be important determinants of firm performance and growth. A cooperation with scientific and R&D circles and other institutions designed to increase SMEs innovation level is vital on the account of the specificity of SMEs, which generally have limited human resources and a low financial potential. The results of the analysis indicate that local authorities including chambers of crafts and commerce and entrepreneurs associations are major partners in innovation cooperation for SMEs. As far as an SMEs cooperation with R&D institutions is concerned, a leader-role is generally played by universities. However, according to the SMEs, the reasons for low intensity of cooperation with R&D sphere are scientific institutions themselves - SMEs report difficulties with initiating a cooperation with scientific institutions, a lack of interest of these institutions to involve in such a cooperation, and ignorance of the economic subject matter on behalf of these institutions' representatives. The above results show that it is necessary to start intense activities destined to increase the SMEs' understanding of benefits resulting from a cooperation with scientific institutions. Moreover, abolishment of the barriers identified in this study limiting both innovation implementation processes and SMEs' cooperation with scientific sphere is recommended.

The author of the study has intended to assess SMEs needs for innovation support from scientific institutions. The demand for specific types of support from universities has been much lower than the analyzed above demand for periodical R&D. The entrepreneurs have been mostly interested in periodical trainings and workshops for enterprises, which were preparing or which were involved in innovative projects, as well as information meetings on specific types of and kinds of innovations. Such a low level of demand for support from universities is due to the fact that most analyzed SMEs cannot see any potential benefits resulting from a cooperation with scientific institutions. The only positive effect of such a cooperation, which a majority of the analyzed SMEs from all the countries have agreed upon is "launching new products and services". However, the analyzed SMEs have declared a very high demand for trainings and consulting services from scientific environment. Services, products and new technologies are desired fields of a possible cooperation. Unfortunately, a high demand for R&D is not accompanied by SMEs' intentions to conduct such research in the future. The study shows a high degree of uncertainty among SMEs as to satisfaction of their R&D needs.

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*Alicja Winnicka-Wejs*

### 3.9 COMPETITIVENESS OF TRAINING COMPANIES IN POLAND IN VIEW OF RESEARCH RESULTS

**Summary:** The article presents the findings of research concerning the competitiveness of training companies, conducted among members of the Polish Chamber of Training Companies. During the survey an independently developed questionnaire was used. The article is of utilitarian nature – 16 research hypotheses were verified. The findings were presented in five main categories: the characteristics of competition on the training market, competitive potential of training companies, competitive strategies of training companies, evaluation of competitive differences and competitive positions of training companies.

**Keywords:** competitiveness of training companies, competition on the training market, competitive strategy, competitive difference

## 1. INTRODUCTION

Training companies offer mainly homogenic services, therefore the assumption of possible competition among the companies seems justifiable. It is assumed in reference books that the training market is characterised by imperfect competition – with a vast number of competitors, a variety of training courses, low entry barriers and high importance of price and promotion (Flak and Głód 2012, p. 30). The available industry reports from economic practice, unfortunately, do not provide full information in that respect.

In these circumstances the analysis of training companies' competitiveness seems an interesting research topic, which will form the subject of this study. The analysis will take into account three key factors: potential competitiveness (ex ante), competitive strategy (a set of competitive instruments) and executed competitiveness (ex post) (Gorynia and Łażniewska 2009, p. 59). The utilitarian objective of the study will be providing the empirical research results, which may be applied with a view to improving the competitiveness of training companies.

## 2. RESEARCH HYPOTHESES

The basic research problem is the competitiveness of training companies. An independent survey questionnaire was developed especially to be used during the research in order to obtain answers to detailed research problems in relation to which the following research hypotheses were formulated:

- H<sub>1</sub>: On the training market the dominating type of relationship among training companies is competition.
- H<sub>2</sub>: The training market in Poland is currently within the process of expansion.
- H<sub>3</sub>: Both the entry and the exit conditions of the training market in Poland are known for their low barriers.
- H<sub>4</sub>: In the nearest future the level of competition on the training market in Poland will be increasing.
- H<sub>5</sub>: Clients' purchasing power on the training market in Poland is evaluated as medium.
- H<sub>6</sub>: There is a fairly substantial discrepancy in the estimates concerning the number of the competing training companies in Poland.

- H<sub>7</sub>: When building competitive potential a greater importance is ascribed to resulting, secondary and primary resources in the intangible area rather than in the tangible area. The following competitive potential metrics are particularly significant: the quality of training staff, the quality of managerial staff and the degree of awareness of current and prospective clients' needs.
- H<sub>8</sub>: In the field of applying competitive instruments training companies ascribe a greater importance to quality rather than price.
- H<sub>9</sub>: When selecting a training company clients are influenced primarily by the coaching staff.
- H<sub>10</sub>: On the training market the strategy of cost leadership is implemented more frequently than strategies of concentration or differentiation.
- H<sub>11</sub>: When the demand for training falls, most companies will undertake the strategy of looking for new clients.
- H<sub>12</sub>: On the training market it is creative reactions of companies to changes in the external environment which prevail.
- H<sub>13</sub>: The majority of the researched training companies evaluate their competitive position, competitive potential and competitive strategies as better than those of an average competitor, thus gaining a competitive advantage rather than a competitive gap.
- H<sub>14</sub>: The competitive advantage of the researched training companies is obtained mainly by the quality of the training services rendered.
- H<sub>15</sub>: The quantification of the competitive position on the training market may include: profitability, market share, awareness of the company's and its services' existence on the market, client loyalty level.
- H<sub>16</sub>: The competitive position of the researched training companies in relation to international competitors is assessed as lower than their position in relation to national or regional competitors.

### **3. RESEARCH METHODS AND TOOLS**

The basic research tool was a survey which consisted of 24 basic questions and 11 metric questions concerning a given training company (8 questions) as well as the person filling in the questionnaire (3 questions). The questions were of closed type.

The survey was conducted on-line. In order to facilitate it a special website was created, where respondents could answer the questions. The information about the survey along with the website address where the questionnaire was to be found was included in the March newsletter sent to all the members of the Polish Chamber of Training Companies (336 training companies) (Mejszutowicz, 2012).

The Polish Chamber of Training Companies (PIFS) is a nationwide organisation which brings together training companies in Poland. It has been present on the market since 2005 and it is a significant source of information and opinion about the situation on the training market as well as changes in the legal regulations concerning this sector of economy. It has its seat in Warsaw and regional structures in 11 voivodships. It represents the environment of training companies before the legislator, European, governmental and local institutions; disseminates the idea of continuous, life-long learning and training courses as tools for self-development and organisation development; it defines and disseminates high quality standards of training services; supports the operations of training companies and integrates the environment by means of the exchange of experience, knowledge and good practice (Polish Chamber of Training Companies, 2012).

The study included only the members of the Polish Chamber of Training Companies (PIFS). The respondents could complete the survey questionnaire in the period of 21.03.2012

to 10.04.2012, yet the participation was voluntary. In the period of the survey PIFS had 336 members: 123 (mazowieckie voivodship), 43 (małopolskie voivodship), 34 (dolnośląskie voivodship), 31 (śląskie voivodship), 26 (łódzkie voivodship), 24 (wielkopolskie voivodship), 55 (remaining voivodshps) (Mejszutowicz 2012).

43 people participated in the survey (12.8%). Upon the rejection of the survey questionnaires which contained more than a half of unanswered questions, the sample size was downsized to 30 people (8.9%).

#### 4. CHARACTERISTICS OF THE RESEARCH SAMPLE SIZE

The survey questionnaires, which qualified to be included in the research analysis, were completed by both men and women, with the ratio of 53.6% to 46.4%, respectively. What is worth noticing is that 55.2% of respondents were training company owners, 34.5% - were people on managerial positions, and 10.3% - were people on specialist positions. A vast majority of respondents were people at the age of 31-50 (60.7%), then those over 50 (25.0%) and those under 30 years of age (14.3%).

The prevailing training companies in the research were micro enterprises (46.6%), small enterprises (33.4%) and sole trader companies (10.0%), while the remaining companies qualified as medium-size (6.7%) and large (3.3%) enterprises.

The primary activity of the companies is obviously training, however 73.3% of them render consultancy services, 20% conduct research, and 13.3% undertake other activities such as: “publishing”, “training logistics, conference room rental”, “IT services”, “employment agency”.

The abovementioned activities are run on a nationwide basis (73.3%), regional basis (13.3%), local basis (6.7%) or international basis (6.7%). As far as their existence on the training market is concerned, training companies are rather diversified: 5 years or below: 30.0%, 6-10 years: 16.7%, 11-15 years: 20%, over 15 years: 30.0%, lack of information: 3.3%.

The registered offices of the companies taking part in the research are located in the following voivodships: mazowieckie (33.3%), łódzkie (13.4%), śląskie (13.4%), małopolskie (10.0%), dolnośląskie (10.0%), lubelskie (6.7%), opolskie (3.3%), pomorskie (3.3%), warmińsko-mazurskie (3.3%), wielkopolskie (3.3%).

The recipients of the training services (training company clients) are primarily: large enterprises (18 indications), medium-sized enterprises (16 indications), public institutions (11 indications), small enterprises (10 indications), micro enterprises (5 indications), non-profit organisations (1 indication), as well as all the abovementioned ones (8 indications). They are mainly clients from the service industries (23 indications), production industries (21 indications), from the public sector (15 indications) and associations/ funds (5 indications).

Few of the researched companies specialise in specific fields. For example, in the production industry the following specialisations were mentioned: “automotive, production”, “hi-tech, automation, technological innovations”, “dairy products”, while in the service industry they were: “medicine”, “construction, finance, cosmetology, insurance”, “training, integration, project”, “ICT, business services”.

The variety of subject matters of the training courses offered by the researched companies is rather wide and it includes the following: coaching (12 indications), finance/accounting (8 indications), Information Technology (4 indications), marketing (11 indications), customer service/sales/negotiations (21 indications), law (8 indications), Health and Safety training (4 indications), foreign language training (4 indications), vocational training (6 indications), interpersonal skills (19 indications), management (20 indications), Human Resources management (18 indications), other (7 indications): “technology, health, organisation”,

“postgraduate education”, “didactics and upbringing”, “NLP”, “configuration of IT systems”, “social insurance”, “logistics”.

## 5. THE FINDINGS OF RESEARCH ON THE COMPETITIVENESS OF TRAINING COMPANIES IN POLAND

### 5.1. CHARACTERISTICS OF COMPETITIVENESS ON THE TRAINING MARKET

According to 53.3% of the respondents the prevailing type of the relationship among training companies in Poland is *coopetition*, which means both cooperation and competition. Nevertheless, 43.3% of the respondents considered competition to be the dominant type of relationship on the training market (Table 1).

*Table 1: The prevailing type of relationship among training companies in Poland according to the respondents*

In your opinion, what type of relationship prevails among training companies in Poland?	Number of responses	Percentage
Competition (confrontation)	13	43.4%
Cooperation (liaising)	0	0.0%
Coopetition (cooperation and competition)	16	53.3%
Lack of response	1	3.3%
Total	30	100.0%

Source: Own study on the basis of the conducted survey

In the opinion of 53.3% of the respondents, the training market in Poland is on the expansion stage, 26.7% believe that it is on the stabilization stage, whereas 16.7% indicated the initial stage. The training market is definitely not on the decrease (Table 2).

*Table 2: Current development stage of the training market in Poland in the respondents' opinion*

In your opinion, on which development stage is currently the training market in Poland?	Number of responses	Percentage
Initial stage (introduction)	5	16.7%
Expansion stage (development)	16	53.3%
Stabilization stage (maturity)	8	26.7%
Falling stage (decline)	1	3.3%
Total	30	100.0%

Source: Ibid.

Half of the respondents defined the entry and exit barriers of the training market in Poland as small, however one in three respondents believes that the entry barriers are fairly large as opposed to the comparatively small exit barriers. Only 10.0% of the respondents marked the reply which mentioned small barriers of entry and large barriers of exit.” (Table 3).

*Table 3: Barriers of entry and exit on the training market in Poland*

What barriers of entry and exit are characteristic for the training companies in Poland?	Number of responses	Percentage
Barrier of entry – large, barrier of entry exit – large	1	3.3%
Barrier of entry – small, barrier of exit – small	15	50.0%
Barrier of entry - large, barrier of exit – small	11	36.7%
Barrier of entry – small, barrier of exit – large	3	10.0%
Total	30	100.0%

Source: Ibid.

In the nearest future the level of competition on the training market in Poland will be growing – this is the opinion of 70.0% of respondents. 26.7% of respondents, however, hold the opposite view on that topic: competition will stay on the same level (16.7%) or there will be a decline (10.0%) (see Table 4).

**Table 4: Division of respondents depending on their forecast level of competition on the training market in Poland in the nearest future**

<b>What will be the level of competition on the training market in Poland in the nearest future?</b>	<b>Number of responses</b>	<b>Percentage</b>
Growing competition (increase)	21	70.0%
Competition on the same level	5	16.7%
Declining competition (decrease)	3	10.0%
I do not know	1	3.3%
Total	30	100.0%

Source: Ibid.

More than a half of the respondents, i.e. 53.3%, evaluated clients' purchasing power on the training market in Poland as medium, 26.7% - as low, and 20% - as high (Table 5).

**Table 5: Evaluation of clients' purchasing power on the training market in Poland by the researched group**

<b>How do you evaluate clients' purchasing power on the training market in Poland?</b>	<b>Number of responses</b>	<b>Percentage</b>
Very high	0	0.0%
High	6	20.0%
Medium	16	53.3%
Low	8	26.7%
Very low	0	0.0%
Total	30	100.0%

Source: Ibid.

It is interesting to see the findings of the research concerning the estimated number of competitive training companies in Poland. Table 6 presents large discrepancies in these estimations. It should be emphasized that in Poland the lowest estimated threshold of the training market size is estimated at 2500, with the highest being estimated at no less than 9500 (Czernecka and Woszczyk 2011, p. 13).

**Table 6: The number of competitive training companies in Poland, according to the researched group's estimations**

<b>How do you estimate the number of competitive training companies in Poland?</b>	<b>Number of responses</b>	<b>Percentage</b>
Below 2000	10	33.4%
2001-5000	10	33.4%
5001-8000	4	13.3%
8001-11000	4	13.3%
Over 11000	1	3.3%
No reply	1	3.3%
Total	30	100.0%

Source: Ibid.



## 5.2. COMPETITIVE POTENTIAL OF TRAINING COMPANIES

The research has provided interesting data in the scope of potential competitiveness (ex ante) of training companies. The key factors, according to the respondents, are the following metrics: coaching staff quality (73.4%), collected know-how (63.3%), awareness of the current and prospective clients' needs (63.3%), managerial staff quality (50%). Only four companies listed other, significant to them, metrics of competitive potential, including: accessibility and fast response to clients' inquiries; ability to obtain funds from the European Union; flexibility; recognition, company brand (Table 7).

*Table 7: Significance of individual competitive potential metrics of the the researched training companies according to respondents*

<b>Weight</b>	<b>5 Very high significance</b>	<b>4 High significance</b>	<b>3 Medium significance</b>	<b>2 Low significance</b>	<b>1 No significance</b>
Competitive potential metrics					
Philosophy of action (strategy, mission, values)	13 (43.4%)	10 (33.3%)	6 (20.0%)	1 (3.3%)	0 (0.0%)
Collected know-how	19 (63.3%)	8 (26.7%)	2 (6.7%)	1 (3.3%)	0 (0.0%)
Financial capital	1 (3.3%)	10 (33.3%)	11 (36.7%)	6 (20.0%)	2 (6.7%)
Modern technology	5 (16.7%)	12 (40.0%)	8 (26.7%)	4 (13.3%)	1 (3.3%)
Coaching staff quality	22 (73.4%)	4 (13.3%)	3 (10.0%)	1 (3.3%)	0 (0.0%)
Managerial staff quality	15 (50.0%)	10 (33.3%)	5 (16.7%)	0 (0.0%)	0 (0.0%)
Awareness of the current and prospective clients' needs	19 (63.3%)	8 (26.7%)	3 (10.0%)	0 (0.0%)	0 (0.0%)
Distribution and promotion channels	8 (26.7%)	9 (30.0%)	12 (40.0%)	1 (3.3%)	0 (0.0%)
Image (including brand awareness)	10 (33.3%)	10 (33.3%)	8 (26.7%)	2 (6.7%)	0 (0.0%)
Client loyalty	12 (40.0%)	9 (30.0%)	6 (20.0%)	3 (10.0%)	0 (0.0%)
Other, what kind:	Accessibility and fast response to clients' inquiries; Ability to obtain funds from the European Union; Flexibility; Recognition, company brand.				

Source: Ibid.

## 5.3. STRATEGIES OF COMPETITIVE TRAINING COMPANIES

In the course of the research data concerning the competitive instruments applied by training companies were collected, thus specifying their competitive strategies. Competitive instruments which are very frequently applied by the researched training companies include: quality of the training offered (70.0%), flexibility in offering tailored-made services (56.7%), own know-how (40.0%), guaranteed results (36.7%). "Rarely" or "hardly ever" do training companies apply the following instruments: vast distribution network, launching new services more frequently than the competitors, price of the training services (Table 8).

**Table 8: The frequency of application of selected competitive instruments in the researched training companies**

<b>Frequency of application</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>No response</b>
<b>Competitive instruments</b>	<b>Very often</b>	<b>Often</b>	<b>Rarely</b>	<b>Hardly ever</b>	<b>Difficult to say</b>	
Quality of the training offered	21 (70.0%)	7 (23.4%)	0 (0.0%)	0 (0.0%)	1 (3.3%)	1 (3.3%)
Price of the training services	6 (20.0%)	10 (33.3%)	8 (26.7%)	5 (16.7%)	0 (0.0%)	1 (3.3%)
Own know-how	12 (40.0%)	15 (50.0%)	2 (6.7%)	0 (0.0%)	0 (0.0%)	1 (3.3%)
Flexibility in offering tailored-made services	17 (56.7%)	9 (30.0%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)
Distinctness of the training services	6 (20.0%)	14 (46.7%)	6 (20.0%)	1 (3.3%)	2 (6.7%)	1 (3.3%)
Launching new services more frequently than the competitors	5 (16.7%)	10 (33.3%)	11 (36.7%)	2 (6.7%)	1 (3.3%)	1 (3.3%)
Vast distribution and sales network	3 (10.0%)	6 (20.0%)	6 (20.0%)	13 (43.4%)	1 (3.3%)	1 (3.3%)
Methods and tools	4 (13.3%)	15 (50.0%)	6 (20.0%)	1 (3.3%)	2 (6.7%)	2 (6.7%)
Recognition on the market	7 (23.3%)	13 (43.4%)	3 (10.0%)	4 (13.3%)	2 (6.7%)	1 (3.3%)
Guaranteed results (effects)	11 (36.7%)	13 (43.3%)	3 (10.0%)	2 (6.7%)	0 (0.0%)	1 (3.3%)

Source: Ibid.

Although the price of the training services is not one of the most frequently applied competitive instruments, according to the respondents the “price and commercial conditions” are the main criteria taken into account by clients when selecting a training company (22.7%), followed by: “staff (coaches)” (15.5%), “previous experience” (13.1%) (Table 9).

**Table 9: The clients’ criteria applied when selecting a training company in the respondents’ opinion**

<b>In your opinion, what are the clients’ criteria when selecting a training company?</b>	<b>Number of indications</b>	<b>Percentage</b>
Staff (coaches)	13	15.5%
Understanding client’s business needs	6	7.1%
Previous experience	11	13.1%
Guarantee of results( effects)	7	8.3%
Verified know-how	3	3.6%
Company specialisation in a given field	6	7.1%
Methods and tools	2	2.4%
A variety of application forms	1	1.2%
Efficient management of a training project	0	0.0%
Training company recognition	8	9.5%
Price and commercial conditions	19	22.7%
Others’ recommendation	8	9.5%
Total	84	100.0%

\* Respondents were allowed to select 3 answers at the maximum.

Source: Ibid.

Currently, almost half of the researched training companies apply some development and specialisation strategies, i.e. aims to ensure quality. Over 23% of the companies offer distinct services, and 20% focus on a selected market segment (Table 10).

**Table 10: Competitive strategies applied currently by the researched training companies**

What competitive strategy is your training company applying currently?	Number of responses	Percentage
Cost strategy – minimising total costs	2	6.7%
Differentiation strategy – offering distinct services	7	23.3%
Development and specialisation strategy – focus on quality	14	46.7%
Impoverishment and limitation strategy – negative distinction	0	0.0%
Concentration strategy – focusing on a selected market segment	6	20.0%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

When the demand for training services drops, the researched training companies will: start seeking new clients (24.7%), undertake promotional/sales campaigns (16.1%), enrich their offer with new training topics (14.8%) (Table 11).

**Table 11: Operational strategies implemented by the researched training companies when the demand for training services drops**

When the demand for training services drops, what operational strategies does your training company implement? *	Number of indications	Percentage
Seeking new clients	20	24.7%
Seeking new partners for cooperation	6	7.4%
Extending territorial coverage of operations	5	6.2%
Enrichment of offer with new training topics	12	14.8%
Enrichment of offer with modern training methodology	4	4.9%
Cutting the price of training courses	4	4.9%
Promotional marketing/sales campaigns	13	16.1%
Expanding the scope of services on offer (i.e. consulting)	8	9.9%
Commencing a new kind of activity	4	4.9%
Restructuring (downsizing, limiting the services on offer)	5	6.2%
Other: what kind....	0	0.0%
Total	81	100.0%

\* Respondents were allowed to select 3 answers at the maximum.

Source: Ibid.

Majority of researched companies noted themselves as changing “the existent market status quo” (Table 12), as well as “foreseeing changes and creatively preventing their possible negative effects” (Table 13).

**Table 12: Division of the researched training companies taking into account their characteristics in the scope of innovation**

Company characteristics in the scope of innovation	Number of responses	Percentage
Company with proactive innovations – changing the existent market status quo	23	76.7%
Company with reactive innovations – imitating market leaders’ services	6	20.0%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

**Table 13: Ways of reacting to changes in the external companies by the researched companies**

<b>Taking into account changes in the external environment of the company, how does your company react?</b>	<b>Number of responses</b>	<b>Percentage</b>
Responds by adapting to real changes	9	30.0%
Forsees changes and creatively prevents their possible negative effects	20	66.7%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

#### **5.4. EVALUATION OF COMPETITIVE DIFFERENCES OBTAINED BY THE RESEARCHED TRAINING COMPANIES**

What is also interesting is the evaluation of competitive differences obtained by the researched training companies. The vast majority of respondents believe that the company gains a competitive advantage, and half of those evaluate it as being on a medium level in selected aspects: position, competitive potential and competitive strategy (Table 14).

**Table 14: The evaluation of competitive differences obtained by the researched training companies in selected aspects in the opinion of respondents**

Evaluation of the difference Verified aspect	Competitive advantage (positive difference)	Competitive advantage (positive difference)	Position equal to the average competitor	Competitive gap (negative difference)	Competitive gap (negative difference)	Lack of response
	LARGE	MEDIUM		MEDIUM	SMALL	
Current competitive position	4 (13.3%)	15 (50.0%)	7 (23.3%)	2 (6.7%)	0 (0.0%)	2 (6.7%)
Prospective competitive position	8 (26.7%)	15 (50.0%)	4 (13.3%)	1 (3.3%)	0 (0.0%)	2 (6.7%)
Existent competitive potential	3 (10.0%)	16 (53.3%)	8 (26.7%)	1 (3.3%)	0 (0.0%)	2 (6.7%)
Company's competitive strategies	6 (20.0%)	16 (53.3%)	5 (16.7%)	1 (3.3%)	0 (0.0%)	2 (6.7%)

Source: Ibid.

The competitive advantage is acquired by 83.5% of the researched companies mainly as a result of the quality of training services (Table 15).

**Table 15: Obtaining the competitive advantage by the researched training companies**

<b>Competitive advantage obtained in the training company mainly due to:</b>	<b>Number of responses</b>	<b>Percentage</b>
Price of training services	1	3.3%
Distribution	1	3.3%
Quality of training services	25	83.5%
Promotion	1	3.3%
Other, what kind: know-how and sales	1	3.3%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

## 5.5. COMPETITIVE POSITIONS OF THE TRAINING COMPANIES

The research also provided information in the scope of implemented competitiveness (ex post). The findings confirmed the possibility of competitive position quantification on the training market, which takes into account: profitability, market share, awareness of the company's existence and its services on the market and client loyalty level.

As many as 93.4% respondents evaluated positively the financial situation of the training company in comparison with its competitors, with 53.44 % on the medium level. (Table 16).

**Table 16: The financial situation of the researched training companies in comparison with their competitors**

<b>Financial situation of the training company in comparison with its competitors</b>	<b>Number of responses</b>	<b>Percentage</b>
Very good	2	6.7%
Good	10	33.3%
Medium	16	53.4%
Poor	1	3.3%
Very poor	0	0.0%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

60% of the respondents gave their company an "average" grade when comparing it to its competitors, and 23,4% gave it a "high" grade (Table 17).

**Table 17: The evaluation of the profitability of the researched companies' training operations**

<b>Profitability of the company's training operations as compared to competitors</b>	<b>Number of responses</b>	<b>Percentage</b>
Very high	0	0.0%
High	7	23.4%
Medium	18	60.0%
Low	4	13.3%
Very low	0	0.0%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

Using a five-grade scale, the respondents also evaluated the training market share that the company acquired and compared it with that of competitors. The biggest number of respondents – 36.7% - noted the company's share in the training market as medium level (Table 18).

**Table 18: The evaluation of the training market share that the researched companies acquired as compared with that of competitors**

<b>The training market share that the company acquired as compared with that of competitors</b>	<b>Number of responses</b>	<b>Percentage</b>
Very large	2	6.7%
Large	6	20.0%
Medium	11	36.7%
Small	7	23.3%
Very small	3	10.0%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

The respondents also noted competitive position with reference to the recognition of the company and its services on the training market. The findings showed that in the respondents' opinion most of the researched companies are very well or well recognized: 76.7% of them among clients, and 56.7% of them among competitors. The degree of company recognition by clients is higher than by competitors (Table 19).

**Table 19: The evaluation of the researched training companies and their services on the market**

Degree of recognition Awareness of the company's existence by:	Degree of recognition					
	Very well recognised	Well recognised	Hardly recognised	Very hardly recognised	I do not know	Lack of response
Clients	5 (16.7%)	18 (60.0%)	4 (13.3%)	0 (0.0%)	2 (6.7%)	1 (3.3%)
Competitors	6 (20.0%)	11 (36.7%)	9 (30.0%)	0 (0.0%)	3 (10.0%)	1 (3.3%)

Source: Ibid.

The share of loyal clients among the recipients of services provided by the researched training companies is rather varied. It is worth noticing that high percentages of loyal clients prevail (Table 20). Consumer loyalty may play a major role on the consumer market, as is the case in other services markets. A question comes to mind, whether on this particular services market there is also a very high correlation between client loyalty and staff loyalty (e.g. coaches)? (Lipka, Winnicka-Wejs, Acedański 2012, p. 51).

**Table 20: The evaluation of loyal clients' share among the recipients of the services provided by the researched training companies**

Loyal clients' share among all the recipients of the services provided by the training company	Number of responses	Percentage
Up to 20%	5	16.7%
21%-40%	3	10.0%
41%-60%	11	36.6%
61%-80%	5	16.7%
81%-100%	5	16.7%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

Interesting are the findings concerning the evaluation of the competitive position of the researched training companies as compared to international, national and regional competitors. What turns out is that whereas the highest number of "comparable" evaluations appear in comparison to national competitors, "higher" evaluations in comparison with regional competitors and "lower" evaluations in comparison with international competitors. (Table 21). In other words, the evaluation of the position of the researched training companies in comparison with international competitors is lower than in the case of the evaluation of their position in comparison of national or regional competitors (the evaluation is associated with the business activity territorial coverage of the researched companies).

**Table 21: The evaluation of the position of the researched training companies on the training market in comparison to international, national and regional clients?**

Company position as compared to competitors \ Evaluation	Higher	Comparable	Lower	Lack of response
International	3 (10.0%)	11 (36.7%)	13 (43.3%)	3 (10.0%)
National	3 (10.0%)	23 (76.6%)	2 (6.7%)	2 (6.7%)
Regional	15 (50.0%)	12 (40.0%)	1 (3.3%)	2 (6.7%)

Source: Ibid.

What is highly optimistic is the evaluation of the chances given companies have on the training market in Poland, taking into account the current market situation (including the possible decrease in the subsidies from the European Union Social Funds, dedicated to the implementation of educational projects) – half of the respondents believes that the companies will strengthen their market positions, and almost 47% believe that companies will survive in the industry (Table 22).

**Table 22: The evaluation of opportunities of the researched training companies, taking into account the current market situation**

Taking into account the current market situation, how do you evaluate the chances of the company on the training market?	Number of responses	Percentage
Company will strengthen its market position	15	50.0%
Company will survive in the industry	14	46.7%
Company will be pushed out of the market	0	0.0%
Lack of response	1	3.3%
Total	30	100.0%

Source: Ibid.

It needs to be emphasized that the situation on the training market is dynamic, and what results from the research of the Polish Chamber of Training Companies, there are only small changes, which are only slightly negative in the following areas: acquired income, number of training projects completed, number of people trained, number of employees and coaches (data from 2011 compared to the data from 2010) (Polish Chamber of Training Companies 2012).

## 6. SUMMARY

The research verified positively most of the hypotheses as it is presented in Table 23. Only three research hypotheses were verified negatively. It turned out that on the training market, the dominating type of relationship is not competition but coopetition. When choosing a training company, clients take into account the price and the commercial conditions, rather than the training staff. Majority of the training companies employ the strategy of development and specialization, rather than, as was assumed earlier – the strategy of cost leadership.

**Table 23: Research hypotheses verification results**

<b>Research hypotheses</b>	<b>Verification</b>
H <sub>1</sub> : On the training market the dominating type of relationship among training companies is competition	Negative (the dominating type of relationship is cooperation)
H <sub>2</sub> : The training market in Poland is currently within the process of expansion	Positive
H <sub>3</sub> : Both the entry and the exit conditions of the training market in Poland are known for their low barriers.	Positive
H <sub>4</sub> : In the nearest future the level of competition on the training market in Poland will be increasing	Positive
H <sub>5</sub> : Clients' purchasing power on the training market in Poland is evaluated as medium.	Positive
H <sub>6</sub> : There is a fairly substantial discrepancy in the estimates concerning the number of competing training companies in Poland.	Positive
H <sub>7</sub> : When building competitive potential a greater importance is ascribed to resulting, secondary and primary resources in the intangible area rather than in the tangible area. The following competitive potential metrics are particularly significant: the quality of training staff, the quality of managerial staff and the degree of awareness of current and prospective clients' needs.	Positive (“collected know-how should also be included in the very important metrics of competitive potential)
H <sub>8</sub> : In the field of applying competitive instruments training companies ascribe a greater importance to quality rather than price	Positive
H <sub>9</sub> : When selecting a training company, clients are influenced primarily by the coaching staff.	Negative (clients choosing a training company take into account the „price and commercial conditions”),
H <sub>10</sub> : On the training market the strategy of cost leadership is implemented more frequently than strategies of concentration or differentiation.	Negative (on the training market the strategy of development and specialisation is employed more frequently than the strategy of differentiation or concentration
H <sub>11</sub> : When the demand for training falls, most companies will undertake the strategy of looking for new clients	Positive
H <sub>12</sub> : On the training market it is creative reactions of companies to changes in the external environment which prevail.	Positive
H <sub>13</sub> : Majority of the researched training companies evaluate their competitive position, competitive potential, competitive strategies as better than those of their average competitor's, thus gaining a competitive advantage rather than a competitive gap.	Positive
H <sub>14</sub> : The competitive advantage of the researched training companies is obtained mainly by the quality of the training services rendered	Positive



<b>Research hypotheses</b>	<b>Verification</b>
H <sub>15</sub> : The quantification of the competitive position on the training market may include: profitability, market share, awareness of the company's and its services' existence on the market, client loyalty level.	Positive
H <sub>16</sub> : The competitive position of the researched training companies in relation to international competitors is assessed as lower than their position in relation to national or regional competitors.	Positive

Source: Own study.

The research was conducted as part of an independent project for new scientists. The author, bearing in mind a low rate of completed survey questionnaires, will continue research in that field: broadening the scope of potential respondents and raising new research hypotheses.

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*Elena Nicolae, Irina Ion*

### **3.10 THE EVOLVING ACADEMIC FIELD OF LEADERSHIP IN ROMANIAN RESEARCH AND EDUCATION**

**Summary:** After a hiatus of more than 40 years of communism and a transition period of more than 20 years, the Romanian society begins to understand the importance of leadership in the economic, political and educational arenas. The main responsible factors for the growing awareness of the need of well performing leadership in all the arenas of social life are the current socio-economic turbulences that directly impact citizens' standard of living and not a growing body of research and education in leadership. In this context, our research scope is to assess the progress made by the academic field of leadership in Romanian research and education, highlighting the resources it has for developing sustainable leadership models. For this purpose, we will identify and analyse the existing academic programmes in leadership, past and current research projects and the Romanian literature in the field. We will study their potential to produce leadership practices and models relevant for today's instable and challenging organizational environment. Based on these findings, we will also explore the measure in which Romanian leadership research manages to transfer its findings to the private and public sectors, in order to contribute to the overall competitiveness of the Romanian business environment. We will use a qualitative and holistic methodology based mainly on secondary research.

**Keywords:** leadership, Romanian leadership models

#### **1. INTRODUCTION**

“The communist dictatorship in Romania has flattened society and made initiative, critical thinking and innovation dangerous” (Dalton and Kennedy, 2007, p. 233), which, in turn, has affected managerial culture, leadership practices and entrepreneurship development.

After a hiatus of more than 40 years of communism and a transition period of more than 20 years, Romanian society begins to understand the importance of leadership in the economic, political and educational arena. Interestingly, the main responsible factors of the growing awareness of the need for well performing leadership in all the arenas of social and economic life are the current socio-economic turbulences that directly impact citizens' standard of living and less a growing body of research and education in leadership.

In this context, our research scope is to assess the progress made by the academic field of leadership in Romanian research and education, identifying the resources it has for developing sustainable leadership models and how it relates to possible transfers of knowledge to the real economy.

For this purpose, we will identify and analyse past and existing Romanian literature in the field and available academic leadership programmes. We will study their potential to produce leadership practices and models relevant for today's unstable and challenging Romanian organizational environment. We will use a qualitative and holistic methodology based mainly on secondary research.

#### **2. LEADERSHIP AND MANAGERIAL CULTURE IN ROMANIA**

From a historical point of view, “Romanian cultural history stresses an autocratic leadership style due to strong historic elements of economic centralization and the structural remains of communism. (...) in Romania there is a strong value on traditionalism, and managers lean towards a more task oriented leadership style” (Fein et al., 2010, p. 368).

During the communist regime, an extended industrialization process was carried out, which needed specific managerial structures. Within those structures, “managers were simultaneously immensely powerful and weak” (Dalton and Kennedy, 2007, p. 248), because of limited decision power, being more administrators than managers. One of the few academic works in management was Nicolescu’s book “The improvement of the organization of managing enterprises” (1986), in which an analysis of 30 organizations is carried out, summing up a series of best practices in management in the communist regime.

The closed political regime, the post-communism transformational process and, further on, the increasing global economic integration (Steyrer et al., 2006), explain partially the present Romanian leadership and management preferences and styles, that nowadays have embraced Western, mainly Anglo - American principles of management. “The influences of the transition process, including the restructuring of the firm and its culture, is seen as an important factor for both stability and change in leadership behaviour in Romania” (Steyrer et al. 2006).<sup>9</sup>

But what do we know about Romanian leadership and managerial culture?

Fortunately, the majority of studies converge in their characterization of the typical Romanian leadership style. For example, Finlay, J., L., Mark, N., Catana, Gh. Catana (Dec. 2003) show that, in Romania, the manager - employee relation follows Weber’s rational legal style of leadership. Their conclusion is based, among others, on the fact that in Romania, management is perceived as a group phenomenon, involving employees’ strict loyalty, good managerial communication skills, short term orientation.

Steyrer et al. (2006) carry out a complex and comparative analysis of leadership in Romania, Estonia, Germany and Austria. The conclusion regarding Romania is in line with previous research and indicates a high self-protected behaviour (the highest in the group of countries mentioned), a patriarchal, authoritative, risk adverse, non-participative, but “humane” leadership style.

Dalton and Kennedy (2007) underline in their study of several Romanian organizations that the Romanian leadership style shows a strong tendency toward decentralization, which is commonly obtained by the figure of a “project leader”. According to the authors, middle and lower Romanian managers tend sometimes not to trust their own judgements, but to follow orders. Also, they might embrace a passive attitude, manifest a preference for risk avoidance and be likely to use personal authority that might jeopardize team working, motivation and initiative. Dalton and Kennedy (2007) also emphasise that part of the Romanian management culture is based on formalism and status, a recurrent conclusion in organizational culture studies about Romania.

A recent and complex study of the company Human Synergistic Romania (2011), carried out a national survey on a sample of more than 800 employees, 180 business leaders and 50 Human Resources managers. The results indicated that Romanian leaders are perceived to: a) lead people controlling in details the execution of tasks, b) be more stressed than foreign leaders, c) carry out their task more in order not to break the rules of the organizations, and less in order to follow and accomplish constructive aspirations; Romanian leaders are, again, perceived to be defensive, rather than constructive, which impacts on strategy formulation.

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<sup>9</sup> For a detailed and in depth analysis of the historical factors that explain management culture in Romania or other Eastern countries, see Dalton and Kennedy (2007)

### 3. ROMANIAN AND FOREIGN ACADEMIC LITERATURE ON ROMANIAN LEADERSHIP

Romanian literature is still in an incipient stage in what concerns leadership. After six years after the fall of the communist regime, Romanian management literature was considered to be “a gross adaptation of Western translations, mainly French and American, and virtually no attention has been paid to the specific of national culture. Researchers in management are sponsored to carry out mainly quantitative studies in the hope of squeezing the complexity of managerial life” (Kelemen, 1995, p. 8).

Currently, experts make similar considerations: “there is a low level of development of domestic leadership models, both in academic research as in practice” (Neesham et al, 2008). According to the authors mentioned, a limited number of books regarding leadership was translated in Romanian language, the academic textbooks are also just a few and the majority of books written by Romanian authors mainly focus on management. The effect is that there is no relevant transfer of concepts and knowledge of leadership in the Romanian economy.

One exception from the practice of ignoring Romanian organizational behaviour, probably based on a local incapacity to run quantitative studies in Romanian organizations, is Luca's book (2005), “Employescu”. The author uses Gallup surveys to interview Romanian managers and employees and demonstrates that Romania has similar values with other Balkan countries, like the great distance to authority, high degree of collectivism, feminism, high degree of risk avoidance and short term orientation, which situates the country in an opposite situation from that of Anglo-Saxon countries.

Therefore Luca underlines the paradox that although Romania has borrowed Anglo-Saxon practices of management and the work force does have expectations of a participative and consultative organizational environment, the local organizational culture with its great distance to authority, high degree of collectivism, feminism, high degree of risk avoidance and short term orientation, may favour clashes between employees and managers unless awareness is developed for this situation.

Regarding the main directions of Romanian research in leadership, Neesham et al (2008) show that most of the studies are limited to *political or public leadership*, and less to business leadership. Unfortunately, academic interest in the field is can be hardly correlated with the increasing professionalization of public management and/or leadership, despite positive appreciations of Mos and Bibu (2012), in their study of leadership style in four Romanian municipalities and 120 respondents. The authors show (Mos, Bibu, 2012, pg. 86) “that application of leadership in public administration in Romania has begun”, the results of their studies indication more flexibility, sympathy and openness of Romanian public managers.

Based on our literature review, we conclude that past and current research directions are related to political leadership, educational leadership (Korka, 2002, 2006, 2008; Miron, 2008), public leadership/public governance, in conjunction with public management, including European's Union governance (Popescu et al, 2012). This research agenda is partially explainable by the societal and economic evolutions of a country which is still trying to consolidate its democratic process, political leadership and administrative systems. As Mos and Bibu state (2012, pp. 86) “major changes in the socio-political environment of each country, need diversity and complexity of problems arising in various areas results in an acute requirement of promoting leadership in public administration”. Academics, as part of the intellectual nucleus involved in the democratic transformations of society, have focused primarily on analysing their own organizations - the universities - thus generating a flourishing literature on the role, leadership and management of higher education institutions. The political “battle” needed professionalization, and in the context of an almost empty arena, professional and pseudo professional political leaders and experts have materialized their

knowledge in articles, specialized study programmes and research projects. In addition, European membership in 2007 had as a consequence, on the entire academic publications sector, a huge series of topics addressed by socio-economic researchers, including the European Union's leadership.

Interestingly, as Neesham et al (2008) noticed, research on leadership is not that developed in business. Some factors that could explain this deficit of research and interest are:

- a) the insufficient consolidation of the market economy;
- b) a still unsophisticated business environment;
- c) the absence, in the beginning, and the inconsistency, at present, of leadership and management study programmes.

This also partially explains Pandelica et al.'s considerations regarding the co-existence of the dualistic old and new management practices and values: *"although the Romanian economy works according to market economy principles, values and mechanisms (...) at present, considering the employees' values and attitudes, on the one hand, we can identify, modern values strongly associated with reforms and changes and on the other hand, values pertaining to a slowing-down reforming process mentality"*.(Pandelica et al., 2010, p. 255).

In contrast with the development of the Romanian leadership literature, the curious inquiry of Western researchers has generated an appreciable corpus of knowledge on leadership issues in the Eastern European, transition countries, although a lot of the research is mixed.

Steyrer, J. et al. (2006) conducted a synthetic analysis of the development of leadership literature for the case of Romania. The authors emphasize at the beginning of their research that the main problem seems to be the rigid organizational culture of companies, probably as a reflection of the need to better manage the changes from egalitarian to market based values. The route of research continues, according to the authors, with motivational theory issues, leader traits, behaviour and contingency theory and the impact of Western managerial culture on Romanian organizational culture.

Năstase (2004, 2005, 2007, 2008) generally enriches Romanian literature on leadership and general management, with original contributions, both in Romanian and in English, focusing on organizational culture, development of managerial and leadership skills or the relation between the knowledge based economy and leadership development.

Littrell and Lapadus (2005) develop a comparative research between Romania, Germany and the UK, in which they underline, regarding Romania, the existence of a high power distance score, high uncertainty avoidance and underline the desirable leader behaviour in Romania which is to reconcile conflictive demands and reduce disorder in the system.

Aioanei (2006) studies the most common leadership behaviours in Romania. She concludes that 55 percent of Romanian leaders are authoritarian and 45 percent democratic. She also reveals that Romanian leaders use to retain the final decision, making use of coercion. Aioanei (2006) underlines that the autocratic style is higher in state-owned enterprises; her general conclusion is that Romanian leaders fit in the "Military Man" pattern, although expectations are to move on to a more participative and democratic leadership style.

In their research, Fein et al. (2010) aim at examining preferences for both transformational and transactional leadership behaviour for gender- and age-based cohort differences. They find that there are differences in preferences for leadership behaviour based on age cohorts that reached maturity before or after the fall of Ceaușescu during the 1989 revolution and that female participants showed a greater preference for transformational leadership behaviours relative to transactional leadership behaviours.

Barbu and Nastase (2010) address the issue of new challenges faced by leaders to the significant socio-economical transformations and economic crisis moments, i.e, organizational transformations in managerial and leadership path due to changes in the external environment. The study also analysis new particularities in leadership and

management processes, like the use of participative style on a large scale, due to the need of constantly learning. The authors conclude that “managing organization “on change paths” means understanding, discipline, creativity and ingenuity” (pp. 130), but also that the economic crises usually make leaders to be better prepared to run organizations. In the words of the authors, “crisis is a time when both opportunity and danger are present and therefore leaders should be good in transforming danger into opportunities in order to value the situations at their best” (pp. 133).

Nicolae (2010) in her book “*Leadership. A Global and cultural approach*” enriches the Romanian academic leadership literature by an interdisciplinary and intercultural approach. The main contribution of the book, written in English, is the synthetic but consistent analysis of leadership models and approaches belonging to very different historical epochs, from Confucius to Juran and Deming.

Ispas (2012) uses a traditional approach to leadership, in the business area, on a specific industry: the Romanian hotel industry. She tests the opinions of both managers and employees on how these perceive four leadership styles (the autocratic, participative, transformational and transactional one). Despite the high practical value of the paper, the sample was limited to 20 managers and 30 employees. According to the results reported, “managers perceived their own leadership style more autocratic and participative meanwhile employees perceived them to be more autocratic and transformational” (pp. 294). In our opinion, despite the simplicity of the study, it is valuable mostly because it opens the doors for more applicable, business case based research in Romania.

Other study with an applicative nature is “The Impact of Motivation Through Leadership on Group Performance”, by Tebelian (2012). The study aims at testing the influence that a leadership style has on the performance of employees. The two styles that are tested are “transformational” and “servant” leadership styles. Defines the servant style as that leadership that “transcends the boundaries of transformational leadership by simply aligning the motives that drive the leaders with those that drive their disciples” (pp. 315-316). Although the conclusions regarding a direct relation between motivation and leadership style lack clarity, one final thought is worth to quote, as it shows signs of maturity in leadership research: ‘in order for the leadership theory to continue to exist, it must be admitted and accepted that the leadership is a complex process that interacts with behavioural, relational and situational elements. The leadership does not concern only the individual but also resides at the individual, dyadic, group and organizational levels.’ (Tebelian, pp. 322).

#### **4. LEADERSHIP TRAINING PROGRAMMES AND COURSES IN ROMANIA**

According to Fein et al. (2010, p. 365), “leadership training is the type of management training that includes a primary focus on communication with various types of people, primarily to influence individuals to exert effort towards organizational objectives”.

The Romanian literature regarding the concept of leadership still needs to be improved, but formal leadership courses are better represented on the Romanian market, and in recent years a growth has been noticed. In the following section we will look at academic courses and at the training courses offered by non-academic organizations.

There are still no specific leadership courses for undergraduate students at university level as opposed to other universities around Europe. For example the University of Exeter in the UK offers two undergraduate programmes that focus solely on leadership: Leadership and Politics and Management with Leadership<sup>10</sup>. While the specific courses on leadership are still absent from most study programmes, in recent years Romanian universities offering majors in

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<sup>10</sup> <http://business-school.exeter.ac.uk/programmes/undergraduate/businessandmanagement/>

business and management have started to offer courses focused on soft skills such as intercultural communication, effective listening, negotiation etc. Soft skills can lead to the improvement or the development of leadership skills.

The situation is improved in master programmes as most of them offer leadership courses. Most programmes focus on leadership and organizational behaviour. Most of the MBA type courses offered by the Bucharest University of Economic Studies, (such as the Canadian MBA<sup>11</sup> and INDE<sup>12</sup>) started as collaborations with international partners. As a consequence of the latter's expert input, their curriculum has a strong Western theoretical content and relatively little reference is made to Romanian leadership practices.

Some of the best known programmes on the market are: ASEBUSS ([www.asebuss.ro](http://www.asebuss.ro)), Canadian MBA ([www.bsm-mba.ro](http://www.bsm-mba.ro)), INDE ([www.inde.ro](http://www.inde.ro)); WU Executive Academy MBA ([www.executiveacademy.at/remba](http://www.executiveacademy.at/remba)); MBA Open University Business School Programme ([www.codecs.ro/website/ro/documente/oferta/mba/mba.htm](http://www.codecs.ro/website/ro/documente/oferta/mba/mba.htm)), organized in Romania by CODECS; Central European University (CEU) Business School ([www.ceubusiness.org](http://www.ceubusiness.org)); Sheffield University through City College ([www.city.academic.gr/exed](http://www.city.academic.gr/exed)) and City University of Seattle ([www.intercollegeibs.ro](http://www.intercollegeibs.ro)). This is a very dynamic area and there lately we can notice many offers on the market.

Another interesting programme focusing on Romanian leadership coming from the academic environment is the LIDEROM Project, managed by academics from the Bucharest University of Economics during the period 2007-2010. The aim of the project was to create a knowledge base for business leadership education, research and practice in Romania, and more importantly create a model of good practices in leadership which takes into consideration the specific characteristics of Romanian business culture and, at the same time, is efficient in motivating the human resources of an economy going through considerable change. The aim of the project coincided with one of the three strategic objectives of the Research, Development and Innovation (RDI) national system, which refers to the creation of knowledge, by getting excellent results in research and related technology, to increase the visibility of Romanian research at international level and the transfer of these results to social and economic practice.

The Project had five objectives, and those were: (1) to determine the level of development reached by leadership studies and research in Romania; (2) to choose international best practices in the field; (3) to develop a methodology for knowledge and know-how transfer from developed organizational cultures to the Romanian context; (4) to encourage local conceptions of leadership, based on experiences in the Romanian business culture; and (5) to create an online portal that would help Romanian businesses in using various models of excellence in leadership according to their own organizational development needs.

The research was conducted in two stages. The first stage of the project consisted in performing the literature review on leadership and recognizing international models of leadership excellence. The review is quite comprehensive and is based on information collected from over 50 international databases, and includes examples referring to transformational leadership, situational leadership, positive leadership and psychological capital. The second stage of the project revolved around data collection and conducting interviews with international specialists in business leadership. The working team of the project conducted interviews with top specialists in leading organizations in the UK, the Netherlands and Australia. In communicating its conclusions, the team has relied on know-how shared by the Prince of Wales International Business Leaders Forum (represented by Lord Alan Watson of Richmond), the Centre for Management Development at London

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<sup>11</sup> <http://www.bsm-mba.ro/>

<sup>12</sup> <http://www.inde.ro/>

Business School, the National School of Government (London), the Tavistock Institute (London), the Inspirational Development Group (London), the International Business and Management Studies Institute at the University of the Hague, the Institute of Social Studies (the Hague), Clingendael-Netherlands Institute of International Relations (the Hague), Maastricht School of Management, the International Business Administration Program at Vrije University (Amsterdam), the Department of Management at Monash University (Melbourne, Australia) and the Graduate School of Business at Monash University (Melbourne, Australia).

Aside from research programmes developed by the academia which obviously have a more theoretical approach there is a growing interest in the field of leadership from the business people and entrepreneurs. There is a growing trend for leadership courses organized in companies as part of career development programmes or HR strategy and usually with in-house trainers, about whom information is not publicly accessible and therefore is far more difficult to obtain. These leadership courses are usually aimed at middle and top management.

A unique leadership development perspective has been promoted and delivered by the CODECS Foundation for Leadership. The CODECS Foundation for Leadership was created in February 2001 by S.C. CODECS S.A.<sup>13</sup>. The Foundation is a non-political organization, without a working scope, nongovernmental, with the purpose of creating, developing and consolidating the organizational leadership culture in Romania, by contributing to the creation of new generations of leaders, capable of triggering the change management mechanisms, using professional, knowledge, influence and connection excellence. Some of the Foundation's key principles are: raising the general public's interest in the topic, promoting academic and professional excellence in the field, and fostering internal and international cooperation for leadership development.

The most known educational project offered by the Foundation is "Leaders of the Third Millennium" (LTM), run at national level in schools and high-schools, in partnership with the British Council as founding partner. Starting with 2006, the Ministry of Education, Research, Youth and Sports became a partner. The purpose of the programme is to develop leadership competencies in students and teachers. The programme modules are focused on one ability that the students develop, amongst which the following are offered: communication, team work, emotional intelligence, negotiation, conflict solving, management, leadership, personal development etc. The values promoted are trust, honesty, competence, performance and civic activity courage.

The offer for leadership courses includes a rich component of personal development courses which have flourished particularly after the economic crisis set in. These are usually training courses of one or two days, typically offering to develop the leader inside the course participant by developing interpersonal abilities, time management skills, communication skills, sales techniques, marketing abilities. These courses are offered by a large variety of Romanian or expatriates run businesses. The need on the market for such courses is self-evident and, since the existence of the European structural funding programmes, particularly those developing the human resources, there has been an increase of the providers and the types of courses offered. This is a good development as there are courses aiming at the grassroots levels of employees, not only at the middle and top management of organizations.

Another method of presenting the developments in the field of leadership is by organising conferences. The first leadership conference in Romania, as it was presented by the organisers, had as guest speaker Stephen R. Covey, which is one of the leading specialist in inspirational leadership. The conference was organised by Human Capital Solutions with the

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<sup>13</sup> <http://www.codecs.ro/en/foundation/>



Financial Paper in November 2006. There were approximately 450 participants from state run and private companies, NGOs, Romanian as well as foreign companies.

According to Covey true leadership is that based on character ethics, and focuses on the main idea that human efficiency is governed by principles that act as natural laws of the human dimension as real and unpredictable in real life as the laws of gravitation in the physics dimension. Covey considers that there are no born leaders but one cannot create a leader. True leaders are self-made because leadership is a personal choice not just a position one applies for or fills in.

In recent years there has been a positive development and mainly a focus on young people and teaching them about leadership. This focus is coming especially from student organisations. AIESEC (Association Internationale des Étudiants en Sciences Économiques et Commerciales) has been organizing for the past years conferences that focus on leadership. In 2010 they organized a conference titled “Leadership Talks” where key figures from the business environment, sports, culture, literature, arts and advertising were invited to discuss what being a leader means. In November 2011 there was another conference titled “Romanian Youth Leadership Forum” which had over 500 participants.

## 5. CONCLUSION

The research of the specific situation of Romanian leadership practices and preferred styles is still only at the beginning and relatively fragmented, however showing clear signs of accelerated development. Because research results are scarce, even though the market demand for leadership training is increasing, the academic community is not sufficiently ready to offer leadership courses and materials based on the realities of the Romanian business environment. Hopefully more importance will be given to the study of Romanian leadership practices not only focusing on theoretical aspect but also making a connection to the business, political, socio-cultural environment.

Leadership courses are still perceived as elite products for top or middle management and not as courses which are necessary to shape the mindset of tomorrow’s decision makers or to increase the responsibilities and productivity of today’s work force.

The world today is not going just through a financial crisis but also a crisis of values and principles. It is important to have leaders that can help lead people through times of uncertainty and guide them towards a better future.

This is even more important for Romanian which has been going through a transition period for the last 22 years and is in clear need of leadership and vision. It is important to understand that leadership is not just a theoretical field of study and that it has very practical applicability which can improve Romanian society. True leaders are not necessarily born but through the proper education and inspiration from positive role models in society we can become leaders that inspire those around us. One mustn’t think that being a leader means that one should be influencing an entire country but we should focus on making a difference in the communities around us. We must focus on developing ourselves and reaching our full potential and aspire to have the qualities we wish to see in our leaders. Each individual should strive to become a role model in his or her community and try to influence the lives of those around him or her in a positive manner.

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*Tamás Koltai, Judit Uzonyi-Kecskés*

### 3.11 DATA ENVELOPMENT ANALYSIS AND ITS APPLICATION FOR MEASURING THE PERFORMANCE OF STUDENTS IN A PRODUCTION SIMULATION GAME

**Summary:** The paper presents a solution for the evaluation of student groups in a production simulation game when decisions have to be made in several consecutive periods. The result of the game is influenced by the utilization of several resource types and there is no any unique measure of performance. The traditional ratio based evaluation fails to capture several aspects of the utilization of the available possibilities in the decision making process.

Data Envelopment Analysis (DEA) is used to evaluate the utilization of several inputs for the generation of outputs in any type of production or service systems. DEA evaluates the efficiency of decision making units based on the ratio of weighted input and weighted output using linear programming. In the presented case a constant return to scale, input oriented, two- phase DEA model is used for the evaluation of students performance in the decision making process. The results of the model help to evaluate the performance of student groups, and also provides information about the teaching effectiveness of several study areas necessary in the decision making process.

**Keywords:** performance evaluation, data envelopment analysis, higher education, training

## 1. INTRODUCTION

The comparison of the performance of several production and/or service units is a general problem which managers frequently have to face. In most cases there is no any single parameter, which can be used for this evaluation. The compared production and/or service systems provide similar outputs (services or products) and they can independently decide on the amount of inputs used. Simply, we call these production and/or service systems as decision-making units (DMU). The comparison of the performance of several branches of a bank, several units of a restaurant chain, or several production lines of the same plant is typical cases of this problem.

Charnes, Cooper and Rhodes (1978) suggested a linear programming model in 1978 which compared DMUs using relative efficiency measures. Based on the suggested model relative efficiency analysis, or *data envelopment analysis* (DEA) became an important research area and a useful tool for practitioners. Several applications of DEA are reported in the literature in the service and in the production sector as well (see for example Panayotis, 1992; Sherman and Ladino, 1995; Markovits-Somogyi, Gecse and Bokor, 2011). A frequently applied area of DEA is higher education. Jones (2006) compared more than 100 higher educational institutions in England using a nested DEA model. Sinuany-Stern, Mehrez and Barboy (1994) analyzed the relative efficiency of several departments within the same university. We also apply DEA in a higher education context, but instead of the performance evaluation of organizations, we focus on the efficiency analysis of student's performance and on teaching efficiency.

In this paper we show, how DEA is applied for the evaluation of the performance of student groups in a production simulation game. This simulation game is part of a course in a master program in the area of management. As a consequence of the complex nature of the simulation game there is not any single measure which can be used for the comparison.

There are two objectives of the application of DEA in this case:

- An evaluation method considering the production and financial results and the efficient utilization of the applied resources is needed for deciding on the ranking of student groups.
- Information about how the methods of production management, financial management and marketing were mastered by the students and used in the simulation game is required.

In the following part of this paper first the basic concepts of DEA and a review of the applied DEA models are provided. Next, the application environment is presented and some important results of the application of DEA are explained. Finally, conclusions are drawn, and the possibilities of the refinement of the presented evaluation and the areas of future research are summarized.

## 2. BASIC MODELS OF DEA

The objective of DEA is to determine the most efficient decision making units relative to each other, and to assign efficiency measures to each unit. By definition, efficiency is measured as a ratio of weighted output and weighted input. The highest value of efficiency is equal to 1 and the lowest value is equal to 0. In the following, first, a graphical illustration is presented which helps to understand the basic concepts and definitions of relative efficiency analysis. Next, the detailed description of the mathematical models applied in the analysis is provided.

### 2.1. GRAPHICAL ILLUSTRATION OF EFFICIENCY ANALYSIS

For illustrational purposes let us assume that the efficiency of 8 stores of a supermarket chain must be compared. The stores are the decision making units and denoted by upper case letters from A to H. The management would like to know, which stores apply most efficiently their employees. An acceptable indicator of efficiency in this case can be the average sale generated by one employee. If the total sale and the number of employees in a given period are known, then the required efficiency ratio can easily be calculated. In this case the number of employees working in the store represents the input and the sale value is the output. These data for the eight stores are given in Table 1. For the sake of simplicity of data representation and of graphical illustration input and output values are normalized to get an efficiency score between 0 and 1. Consequently, input values are divided by 10 and output values are divided by 1 million, that is, store A has 20 employees and generates 1 million Euro of sale in a given year. Based on the input and output data the efficiency scores are given in the last line. We can see, that the most efficient store is store B, because on the average 1 employee generates 100 thousand euro of sale. Store F is the least efficient, because only 40 thousand euro is generated by one employee in a year. Figure 1 plots each store in an employee/sale system of coordinates.

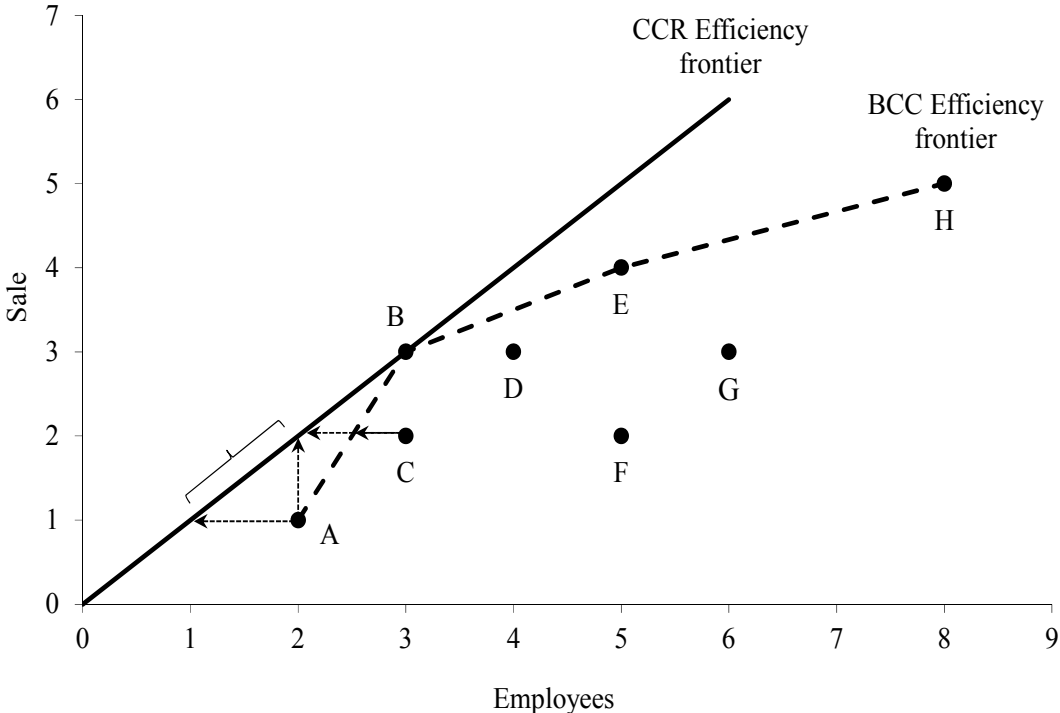
*Table 1: Data of the sample problem*

DMU	Store	A	B	C	D	E	F	G	H
Input	Employees	2	3	3	4	5	5	6	8
Output	Sale	1	3	2	3	4	2	3	5
Efficiency	Sale/employee	0.50	1.00	0.66	0.75	0.80	0.40	0.50	0.63

Source: the authors own table based on some data from the book of Cooper et al (2007)

Let us assume first, that there is a linear relationship between the number of employees and sale. In case of an efficient store any added employee generates an additional one million euro of sale. We assume a constant return to scale (CRS) relationship between the input and output values, that is, the size of the input does not influence the marginal change of output. In this case all hypothetically efficient stores can be depicted on a line which gradient is equal to 1. The solid thick line in Figure 1 contains all these efficient units. This line is called the efficiency frontier. This line is also denoted as *CCR efficiency frontier* after the DEA model used for the calculation and developed by Carnes, Cooper and Rhodes (see in the next section). Since all stores except store B are inefficient, their corresponding points are below this line.

**Figure 1: Graphical illustration of efficiency analysis in case of one input and one output**



Source: the authors own figure based on some data from the book of Cooper et al (2007)

The points below the line belong to inefficient stores. These stores can be made efficient if, as a consequence of management decisions, their inputs are decreased and/or their outputs are increased. Any action which projects the points of an inefficient store to the efficiency frontier represents a proper efficiency improvement policy. There are two main possibilities of this projection as it is indicated in case of store A in Figure 1.

- If point A is projected to the efficiency frontier along the horizontal arrow, then the corresponding sale value (output) does not change, but the number of employees (input) is decreased. The horizontal arrow represents an input oriented policy. If the number of employees can be decreased by 50 per cent and the generated sale will not change, then store A will be efficient.
- If point A is projected to the efficiency frontier along the vertical arrow, then the corresponding sale value (output) is increased, without the change of the number of employees (input). The vertical arrow represents an output oriented policy. If sale can

be increased by 50 per cent without the increase of the number of employees, then store A will be efficient.

Any mixed strategy can also be applied. In these cases the point of store A is projected to one of the point on the efficiency frontier in the interval determined by the vertical and horizontal arrows. This interval is indicated by the brace in Figure 1.

Let assume now, that there is a nonlinear relationship between the number of employees and sale. We assume that in case of few employees the increase of the number of employees has a higher than average effect on the generated sale. This is true up to a critical point. If the number of employees is increased above this critical number, the increase of the number of employees has a lower than average effect on the generated sale. Before the critical number an *increasing return to scale* effect is assumed, while after the critical point a *decreasing return to scale* effect is supposed. In general, since the effect of the change of input is not constant on the generated scale, a *variable return to scale* (VRS) relationship exists.

The dashed thick line in Figure 1 shows the efficiency frontier in case of a variable return to scale situation. This line is also called BCC efficiency frontier after the DEA model used for the calculation and developed by Banker, Carnes and Cooper (1984). We assume in this case, that store A is efficient, because in a store with only 20 employees the generated 1 million euro sale is acceptable, that is, the resulting 400 thousand euro marginal increase of sale is efficient. Increasing now the number of employees in store A the expected marginal increase of sale is higher than 100 thousand euro. The 30 employee of store B is the critical number. If the number of employees is increased above 30, then the expected marginal increase of sale is less than 100 thousand euro.

Applying any efficiency improvement strategy we have to decide whether scaling effect can be assumed or cannot. Let us try to decrease the number of employees in store C without the change of sale. If scaling effect is assumed then store C can be projected with a vertical arrow to the dashed line in Figure 1. If scaling effect is not assumed, then this projection must be done to the solid line in order to make store C efficient. That is, *total* efficiency can be decomposed into *technical* efficiency and *scale* efficiency. The management is responsible for the technical efficiency by using the employees properly. The technology or management practice causing variable return to scale effect is responsible for scale efficiency.

If a variable return to scale approach is used, then stores A, B, E and H are efficient. Store B is the critical store, because it is at the change of the characteristics of scaling effect. The technical and the scale efficiency scores of store B are all equal to 1. Store A has increasing return to scale, while store E and H has decreasing return to scale. Stores C, D, F and G are technical and scale inefficiency as well. If an input oriented approach is used then the number of employees must be decreased in these stores. If the numbers of employees are decreased and these stores are efficient then store D, F and G will have decreasing return to scale.

The employee efficiency analysis of the presented eight stores is simple, because only one input (number of employees) and one output (sale) are considered. If, however, more inputs (for example number of employees, square meter of the stores, etc.) and more outputs (for example sale, profit, customer satisfaction, etc.) are used, the simple analysis presented with the help of Figure 1 gets more complicated. In case of multiple inputs and multiple outputs the presented two dimensional analysis turns into the analysis of multidimensional surfaces and requires the application of linear programming models. The mathematical models used for the analysis of the results of the simulation game are presented in the next section.

## 2.2. MATHEMATICAL MODELS USED IN THE ANALYSIS

Assume now that we have  $M$  inputs and  $T$  outputs in case of  $N$  DMUs. Notations used in the following parts of the paper are summarized in Table 2.

**Table 2: Notation**

<i>Indices:</i>	
$j$	- indice of decision making units, $j=1, \dots, N$ ,
$i$	- indice of inputs, $i=1, \dots, M$ ,
$r$	- indice of outputs, $r=1, \dots, T$ .
<i>Parameters:</i>	
$Y$	- matrix containing the output values of each DMU,
$Y_0$	- vector containing the output values of the DMU examined,
$Y_j$	- vector containing the output values of DMU $j$ ,
$X$	- matrix containing the input values of each DMU,
$X_0$	- vector containing the input values of the DMU examined,
$X_j$	- vector containing the input values of DMU $j$ ,
$e$	- unit vector,
<i>Variables:</i>	
$u$	- vector containing the weights of outputs,
$v$	- vector containing the weights of inputs,
$\lambda$	- ratio of inputs and ratio of outputs in the optimal composition,
$\lambda_j$	- ratio of inputs and ratio of outputs of DMU $j$ in an efficient DMU,
$\theta$	- relative efficiency score,
$\theta^*$	- optimal value of the relative efficiency score,
$s^-$	- vector containing the input surplus values of each DMU,
$s^+$	- vector containing the output shortage values of each DMU.

Source: the authors own table

Vector  $Y_j$  contains the values of outputs of unit  $j$  ( $j=1, \dots, N$ ), and vector  $X_j$  contains the values of inputs of unit  $j$  ( $j=1, \dots, N$ ). The elements of variable vector  $u$  are the weights of the different outputs. The elements of variable vector  $v$  are the weights of the different inputs. Our objective is to find those values of the  $u$  and the  $v$  vectors, which maximize the efficiency of a specific DMU indicated by index 0. The constraints are imposed by the definition of efficiency, that is, at the selected weights the weighted output per weighted input ratio must be less than or equal to 1. The mathematical programming model describing these constraints and goals are the following,

$$\begin{aligned}
 & \text{Max} \quad \frac{uY_0}{vX_0} \\
 \text{DMU :} & \quad \frac{uY}{vX} \leq 1 \\
 & \quad u, v \geq 0
 \end{aligned} \tag{1}$$

Model (1) has no unique solution. It is easy to see that multiplying the numerator and the denominator as well with the same number we get different but equally optimal solutions. Fixing, however, the weighted inputs at value 1 and rearranging (1) by eliminating the ratio of variables, we get the primal input model of efficiency. This model is also called multiplier form of the input oriented CCR model after Carnes, Cooper and Rhodes. The multiplier CCR input model is the following,



$$\begin{aligned}
& \text{Max} && uY_0 \\
\text{DMU:} & && uY - vX \leq 0 \\
\text{Input:} & && vX_0 = 1 \\
& && u, v \geq 0
\end{aligned} \tag{2}$$

Linear programming problem (2) consists of  $N+1$  constraints and  $M+T$  variables. The optimal solution of model (2) consists of the relative efficiency value of DMU 0, and of the optimal values of the input and output weights ( $u, v$ ). In case of  $N$  DMUs,  $N$  number of LP models must be solved, to get the relative efficiency of each DMU. In practice, for mathematical and for management reasons the solution of the dual form of (2) is used. If  $\theta$  is the dual variable of the input normalization equation and  $\lambda_j$  are the dual variables belonging to the inequality of DMU  $j$ , then the dual form of (2) is as follows,

$$\begin{aligned}
& \text{Min} && \theta \\
\text{Output:} & && \lambda Y \geq Y_0 \\
\text{Input:} & && -\lambda X + \theta X_0 \geq 0 \\
& && \lambda \geq 0; \\
& && \theta \geq 0; \theta \leq 0
\end{aligned} \tag{3}$$

Linear programming problem (3) consists of  $M+T$  constraints and  $N+1$  variables. The optimal solution of (3) consists of the efficiency score ( $\theta^*$ ) of DMU 0, and of the optimal values of the dual variable vector  $\lambda$ . The optimal solution of (3) tells the decision maker how much the input of non-efficient DMUs should be reduced to achieve the efficiency of the best DMUs. It also tells the decision maker the optimal composition of inputs. DMUs with  $\lambda_j \geq 0$  create the reference set of DMU 0. If the input of the DMUs in the reference set are combined according to the values of  $\lambda_j$  the highest efficiency can be achieved.

The results of model (2) or (3) provide information about the proportional change of all inputs. It is assumed that all inputs must be decreased by the same proportion ( $\theta^*$ ). Sometimes, however, it is possible to decrease some inputs independently of the other inputs without influencing the outputs. Similarly, sometimes some outputs can be increased independently of the other outputs without requiring more inputs. These possibilities can be explored by the introduction of the input surplus ( $s^-$ ) and the output shortfall ( $s^+$ ) vector variables. The model which determines the input surpluses and output shortfalls is called the slack model. The slack model for the dual input oriented CCR model is as follows,

$$\begin{aligned}
& \text{Max} && es^- + es^+ \\
\text{Output:} & && \lambda Y - s^+ = Y_0 \\
\text{Input:} & && -\lambda X - s^- = \theta^* X_0 \\
& && \lambda \geq 0;
\end{aligned} \tag{4}$$

First model (3) and next model (4) must be solved. The optimal efficiency score provided by model (3) for DMU 0 is  $\theta^*$ . The difference between the reduced input of DMU 0 ( $\theta^* X_0$ ) and the optimal composition of inputs ( $\lambda X$ ) is the input surplus. The difference between the output of DMU 0 ( $Y_0$ ) and the optimal composition of outputs ( $\lambda Y$ ) is the output shortfall. Model (4) determines the maximal values of the independent reduction for each inputs and the independent increase for each output. Note, that in case of input oriented models first all inputs are decreased according to  $\theta^*$ , and next inputs are further decreased according to  $s^-$ .

Similarly, in case of output oriented models first all outputs are increased according to  $\theta^*$ , and next outputs are further increased according to  $s^+$ .

Several other models can be found in the literature for the calculation of relative efficiency. If in model (1) the weighted output is fixed then an output oriented model is defined. If the scaling effect between input and output is considered, then a variable return to scale (VRS) model is given. If input surplus and output shortage is maximized directly, without determining first the relative efficiency score, then the group of additive models is determined. If efficiency is evaluated in several consecutive periods, the dynamic DEA models can be applied. A good review of the existing models is given by Cooper et al (2007).

In the following, we will show how DEA can be used for the evaluation of the performance of students groups in a production simulation game. The presented analysis is based on the results of models (3) and (4).

### 3. APPLICATION ENVIRONMENT

The presented production simulation game is developed by Ecosim to support education and training in the production management area. We applied this simulation game in the Decision Making in Production and Service Systems course of the Management and Leadership Master Program for students specialized in Production and Operations Management at the Budapest University of Technology and Economics.

The objective of the game is to simulate production management decision making in a car engine manufacturing factory. The factory produces three different car engines for five different markets. Each market has its own demand characteristics. The car engines are assembled from parts on assembly lines operated by workers. The following decisions must be made by each student group for the next production period (year):

- Production quantities of the three car engines. Forecasts must be prepared about the expected demand based on the known demand of several previous periods. The expected demand, the available production capacity and the final product inventory information are used to determine the production quantities of the next year.
- Prices and paying conditions. Demand can be stimulated by selling price changes and by favorable payment conditions. Decision must be made on the purchase price of the next production period and on the payment delay percentages offered to customers.
- Ordered quantities of parts. Order quantities of the different part groups must be determined based on the planned production quantities, on the bill-of-material of the car engines and on inventory and financial information.
- Number of workers, number of shifts, and quantity of overtime. Production quantity is determined by the machine capacity and by the number of workers. On short term, capacity can be changed by hiring or firing workers and by changing the number of production shifts or by applying overtime. Decision must be made about the workforce level and about the number of shifts and about the quantity of overtime in the next production period.
- Investments in production line and in space. On long term, production capacity can be increased by investments in new production lines and in space available for production and for inventory. Decision must be made in each production period about the number of new production line installations and about the number of square meters of space extensions.
- Launch of efficiency improvement projects. It is possible to launch projects which may improve production conditions. The predefined projects have different effects and different launch and maintenance costs. Decision must be made on which projects to launch in a given production period.

- Application for credits. There are three different credit types available for financing the operation of the factory. Each type of credit has different conditions. Decision must be made about the amount used of each credit type and about the payback of earlier credits.
- After submitting the decisions, the simulation program generates the results of the actual production period. The results are summarized in two reports:
- Production report. The production report summarizes the decisions made by the student groups for the actual production period and the actual state of the production system. It summarizes the quantity of engines produced and sold, the quantity of parts used and the engine and part inventories at the end of the production period. The number of workers, machine capacities, number of production lines, and space, available for the next production period are also listed.
- Financial report. The financial report contains the balance sheet, the revenue report and the cash flow report valid at the end of the actual production period.

Evaluation of the production and financial reports, and decision making for the next production period requires the knowledge of several study areas thought in the master program. The methods of marketing are required to estimate the behaviour of customers when prices and payment conditions changes. Forecasting models are needed to evaluate future demand possibilities. Inventory control and materials requirement planning techniques must be used to determine and control the inflow of raw materials and parts. Capacity planning techniques are needed to determine the workforce level, the number of operating assembly lines and the required amount of space. Cash flow analysis methods are required to evaluate the would-be effect of efficiency improvement projects. Finally, managerial accounting and corporate finance knowledge is needed to the proper understanding of balance statement, cash flow report and revenue report.

Concluding the seventh production period the student groups are evaluated. Evaluation, however, is very difficult even if only the financial situation of the plants is considered. Pure financial analysis can be misleading. Here are some examples to demonstrate the possible traps of narrow minded financial evaluation:

- Short term success may not necessarily lead to long term success. The plant may accumulate high profit in the first seven periods, but if production resources (production lines, production space, improvement projects) do not support production increase for the future, financial performance may later decrease.
- A group may follow a cautious strategy. They may decide on low production quantity, financed by their available own financial sources. In this case small profit, slow but steady growth can characterize the plant.
- Long term strategic thinking may provide unfavorable financial results on the short run. Heavy investments can be made at the beginning using credits in order to secure capacity for future growths. If all this is paired with demand stimulating marketing policy and with efficiency improvement projects, profit will be low at the beginning, but steep growth can be expected in the future.

Evaluation is further complicated by the fact, that the simulation game is used not only for deciding the winner according to a specific financial measure. We also wanted to know how students mastered the different areas of production management. It may occur that students made poor financial decisions, but they made good inventory management and/or capacity management decisions.

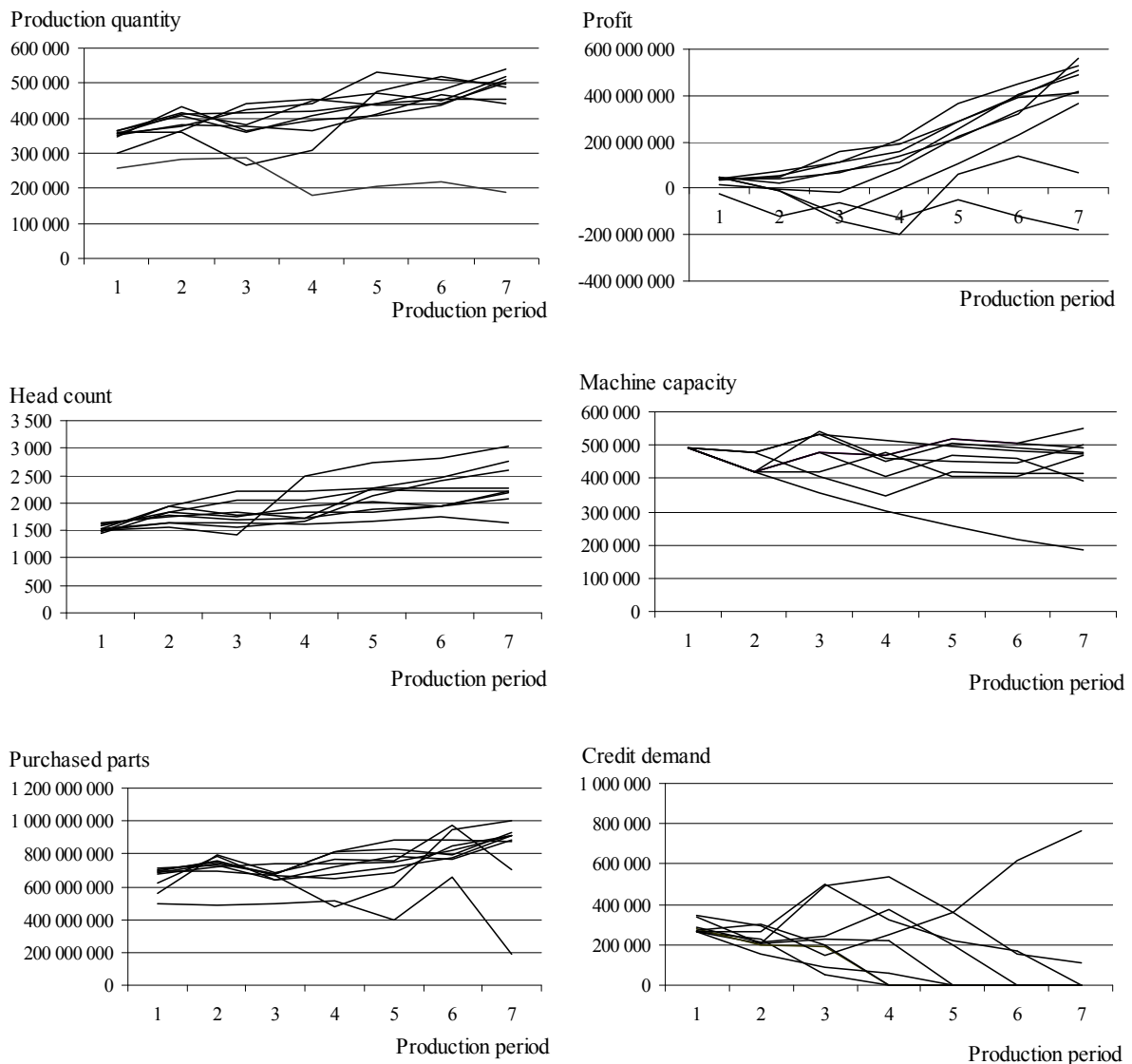
## 4. ANALYSIS OF THE RESULTS

The huge amount of data generated in the decision making process of the student groups, and by the production simulation model provides a solid basis for performance analysis. First, we show how a traditional approach leads to some general conclusions. Next, we explore the possibilities provided by the application of data envelopment analysis.

### 4.1. TRADITIONAL ANALYSIS OF THE RESULTS

Figure 2 presents a few charts, which may help to draw some general conclusions, and also highlight the complexity of evaluation.

*Figure 2: results of the production simulation game*



Source: the authors own figure

The change of production quantity during the seven production periods can be seen in the *Production quantity* chart. It can be seen that, apart from a few exceptions, production is increased from period to period and reached the neighborhood of 500,000 engines per year by the end of the seventh period. One group performed very badly, but the rest of the groups

stabilized production around this quantity. Some groups provided a fluctuating curve, while others had smooth curve reflecting consistent production and marketing policy and thoughtful production planning.

The *Profit chart* shows a much higher fluctuation and reflects better the errors made during the decision making process. Since the profit curves are steeper and spread more, the accumulated profit indicates higher differences of performance at the end of the seventh period. One group showed a steadily poor performance, while others presented poor performance at the beginning, and an improved decision making process in later periods.

The amount of human resources applied in each year is illustrated by the *Head count chart*. The number of employees varies between 1500 and 3000 in the final period showing different policy of the groups in hiring. The groups increased the number of employees constantly but differences in growth policy and in capacity planning are reflected in the chart. Some groups implemented new shift, and opened new production lines, while others answered to demand for increased production capacity by increased overtime. These differences led to different head count values and ultimately to different labor cost.

The change of the amount of applied technical resources of the student groups can be observed in the *Machine capacity chart*. Machine capacity, in general, did not increase during the production periods. New production lines were only used by the groups to substitute old machines. It can be seen, that the original 500,000 machine hours is exceeded only by one group at the end of the seventh production period. This result may reflect that the groups did not prepare for future demand increase with the installation of new and expensive production lines.

The different inventory policies of the groups can be seen in the *Purchased part chart*. We can observe that this chart is very similar to the *Production quantity chart*. We can conclude that, apart from a few exceptions, material planning and inventory control was successfully applied by most groups.

The *Credit demand chart* shows the highest differences among student groups. Some groups applied very good financial planning and demanded very little financial sources. Others built up high debts at the beginning, and needed several periods to balance the cash flow. One group found itself in a financial disaster. Note, that credit demand is influenced by efficiency improvement projects. Some groups financed the initial high cost of these projects from credits to pay it back later with the help of improved operation.

Each of the six charts of figure 2 presents only one specific aspect of decision making during the production simulation game. There are, however, several interdependencies among the charts. For example, the lack of machine capacity increase might be the consequence of increased overtime, and high operating cost, which may influence credit demand. A steep profit increase curve in a later period can be the result of demand stimulating pricing and payment conditions at the beginning.

A method is required which can help to evaluate the efficient utilization of employees, machine capacity, parts and materials and financial sources from the point of view of production quantity and profit. Data envelopment analysis may help to provide an aggregate picture, which includes each of the resources influencing the performance of the groups.

## 4.2. ANALYSIS OF THE RESULTS WITH DEA

We used relative efficiency analysis (DEA) for evaluating the performance of student groups at the end of the seventh period of the simulation game. Two outputs and four inputs were considered in the analysis. The two *outputs* are the following:

- Cumulated production quantity. The production quantity reflects the effect of production management decisions related to machine and worker capacity, to material requirement planning and to inventory management.
- Net cumulated profit. The profit integrates the effect of marketing, production and financial decisions.

The four *inputs* represent the resources used in the production process, that is,

- The cumulated number of workers represents the amount of human resources.
- The cumulated number of machine hours represents the amount of technical resources.
- The cumulated sum of money spent on raw materials and on parts represents the amount of material resources.
- The cumulated value of credits represents the amount of financial resources.

The performance of 9 student groups is compared using a two-phase input oriented CCR model. The results are summarized in Table 3, 4 and 5.

**Table 3: DEA results with production quantity output**

1	2	3	4	5	6	7	8
Team	Output Prod. Quant.	Efficiency $\theta^*$	Workers $s(1)^-$	Machine cap. $s(2)^-$	Material $s(3)^-$	Credit $s(4)^-$	Reference set
Group 1	2 793 305	<b>1,0000</b>	0	0	0	0	-
Group 2	2 779 163	0,9454	1 555	140 739	0	1 308 838	7
Group 3	2 899 000	<b>1,0000</b>	0	0	0	0	-
Group 4	2 889 423	0,9906	0	237 219	0	79 023	3, 5
Group 5	3 054 527	<b>1,0000</b>	0	0	0	0	-
Group 6	2 940 133	0,9838	0	375 767	0	524 956	3, 7
Group 7	3 057 918	<b>1,0000</b>	0	0	0	0	-
Group 8	3 130 992	0,9886	0	104 360	0	839 646	3, 7
Group 9	1 621 135	0,8753	2 372	317 291	0	2 030 721	7

Source: the authors own table

Table 3 shows the case when the cumulated production quantity is the *only* output and the previously indicated four inputs are considered. These results help to evaluate the application of production management knowledge in the decision making process. Column 2 shows the total quantity of engines produced during seven production periods. Column 3 shows the relative efficiency scores. We can see that the highest quantity is found at group 8, although, the efficiency score of this group is not the highest. This group should have produced this output using less input. Group 8 would be efficient if all input were smaller by 1.14 percent. Furthermore, excess machine capacity and overly high credit was used, as indicated by column 5 and 7. The last column shows, that if this group wants to increase efficiency, a mixture of the production practices of group 3 and 7 must be implement.

Table 3 also shows that groups 1, 3, 5 and 7 have the maximum efficiency. We can see that the production quantity of group 5 and 7 is among the highest, the production quantity of group 3 is around the average, and the production quantity of group 1 is below the average. These groups have applied different but equally efficient production practices. In case of group 1 and 3 smaller quantities were produced, but the quantity of resources used was smaller as well.

**Table 4: DEA results with profit output**

1	2	3	4	5	6	7	8
Team	Output Profit	Efficiency $\theta^*$	Workers $s(1)^-$	Machine cap. $s(2)^-$	Material $s(3)^-$	Credit $s(4)^-$	Reference set
Group 1	1 578 563	<b>1,0000</b>	0	0	0	0	-
Group 2	0	0,0000	0	0	0	0	-
Group 3	1 759 553	<b>1,0000</b>	0	0	0	0	-
Group 4	1 538 303	0,9856	0	521 462	334 359 868	0	1, 3
Group 5	1 410 080	0,9005	0	378 256	383 806 582	0	1, 3
Group 6	1 182 609	0,6588	538	38 959	0	194 838	3
Group 7	1 259 507	0,7683	1 155	0	247 415 155	0	1, 3
Group 8	632 569	0,3466	149	0	0	298 208	1, 3
Group 9	0	0,0000	0	0	0	0	-

Source: the authors own table

Table 4 shows the case when the cumulated net profit is the *only* output and the previously indicated four inputs are considered. These results help to evaluate the joint application of marketing, production management and finance related knowledge in the decision making process. The highest possible efficiency is indicated at group 1 and 3. Note that these groups were among the efficient groups in Table 3 as well. The efficiency of group 7 is, however, among the lowest, although it produced the second highest quantity. The reason for this is that high production quantity was not paired with efficient utilization of resources. An efficient group could have produced this output using 23.17 percent less of all resources. Furthermore, overly high number of workers and too many materials were used, as indicated by column 4 and 6 of Table 3. The last column shows, that if this group wants to increase efficiency, it should implement a mixture of the production practices of group 1 and 3.

**Table 5: DEA results with production quantity and profit outputs**

1	2	3	4	5	6	7	8
Team	Output Prod. Quant.	Output Profit	Efficiency $\theta^*$	Workers $s(1)^-$	Machine cap. $s(2)^-$	Material $s(3)^-$	Credit $s(4)^-$
Group 1	2 793 305	1 578 563	<b>1,0000</b>	0	0	0	0
Group 2	2 779 163	0	0,9454	0	0	0	0
Group 3	2 899 000	1 759 553	<b>1,0000</b>	0	0	0	0
Group 4	2 889 423	1 538 303	<b>1,0000</b>	0	0	0	0
Group 5	3 054 527	1 410 080	<b>1,0000</b>	0	312 424	357 210 274	0
Group 6	2 940 133	1 182 609	0,9838	803	58 175	0	290 940
Group 7	3 057 918	1 259 507	<b>1,0000</b>	458	0	20 933 541	196 759
Group 8	3 130 992	632 569	0,9886	0	168 424	0	894 769
Group 9	1 621 135	0	0,8753	1 465	235 195	0	1 267 252

Source: the authors own table

Finally, Table 5 considers together the cumulative production quantity and the cumulative profit as outputs. The differences among the groups are smoothed out in this case. Five groups are considered efficient. Group 4 was not efficient in any of the previous two cases, but their efficiency scores were very near to one (0.99 and 0.98). If we evaluate together production quantity and profit, this group joins the set of efficient groups.

## 5. SUMMARY AND CONCLUSIONS

In this paper the application of DEA is presented for the performance evaluation of student groups in a production simulation game. Relative efficiency of the groups is evaluated based on two different outputs. Cumulated production quantity is used for the evaluation of production management related decisions. Cumulated net profit is used for the evaluation of the joint effect of production, financial and marketing related decisions. Four major resources (human, machine, material financial) are used as inputs in the analysis. The quantity of these inputs used for production is decided exclusively by the student groups, therefore the student groups can be considered as DMUs.

An input oriented two phase CCR model is used for the analysis. The results correctly reflect the performance of the student groups, however, some further refinement of the analysis is recommended:

- We applied large group sizes (5-6 students) in the simulation game and consequently the number of student groups was relatively small. The small group number smoothed out the differences in performance. The application of smaller group size and higher group number is recommended in future applications.
- The same initial conditions were given for each group at the beginning of the simulation. As a result of different growth strategies, however, scaling effect may appear after some production periods. Consequently, the application of a variable return to scale model might be appropriate.
- There was not any specific rule for student group formation. As a result, very different composition of groups concerning the study results and the interest area of students were formed. The consideration of the composition of student groups as non-discretionary variable may further refine the results.
- Finally, the analysis of the dynamic change of performance of student groups during the simulation may highlight some interesting mechanisms of the learning process of student groups. The dynamic DEA models (see for example Tone and Tsutsui 2010) might be promising tools for studying this learning process. The application of dynamic DEA models for the evaluation of the behaviour of student groups is an important direction of our future research.

The presented application of DEA completed with the proposed extensions might be a useful tool for student evaluations in higher education, but can also be applied for the evaluation of participants in any management training program as well.

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## **CHAPTER 4**

### **Business Connections and Cooperations**



*Irina-Eugenia Iamandi, Laura-Gabriela Constantin*

#### **4.1 MEASURING CORPORATE SOCIAL RESPONSIBILITY PRACTICES DEDICATED TO EMPLOYEES IN CENTRAL AND SOUTHEASTERN EUROPE – AN EMPIRICAL APPROACH**

**Summary:** Nowadays, the human resources are considered the main factor for consolidating corporate competitiveness in the international business arena, especially taking into account the most recent transformations that deeply affected the economic and social environment in Central and Southeastern Europe. Following this argument, the objective of our research paper consists in emphasizing the role of corporate social responsibility (CSR) practices in the area of human resource management (HRM) for strengthening the competitiveness of companies in Central and Southeastern Europe. In this sense, our research focuses on top companies ranked by turnover in Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia, for which we determined by computation four innovative composite indices of CSR-HR in order to compare the corporate engagement in a set of employee-related issues. The main issues, or pillars, that we took into account envisage the following: improvement of labour conditions and job satisfaction, work-private life balance, equal opportunities and promotion of diversity, personnel training and development, participation of employees in the decision-making process, fair payment and financial support for employees. In accordance with other studies in the field, the main findings reflect that the economic performance of the companies encourages the overall CSR measures targeting the employees in the companies from Central and Southeastern Europe countries. Detailed findings on the corresponding components of the CSR-HR index are also presented and justified. The paper ends with a suite of strategic recommendations for increasing corporate competitiveness in Central and Southeastern Europe through the CSR-HR continuum, while the findings could be extrapolated to more companies and countries.

**Keywords:** Corporate social responsibility (CSR), Human resource management (HRM), Competitiveness, CSR-HR composite index, Employee-dedicated CSR measures

### **1. INTRODUCTION**

After the most recent economic crisis, the societal pressure put upon companies to increase their corporate social responsibility (CSR) is stronger than ever considering its positive impact for all the stakeholders. In order to better reflect and align to the changes in nowadays business environment, the European Commission has recently proposed a new definition of CSR – “the responsibility of enterprises for their impacts on society”(EC 2011, p. 6), broadly determining the economic, environmental and social influences of the business activities. Furthermore, the European Commission considers that “through CSR, enterprises can significantly contribute to the European Union’s treaty objectives of sustainable development and a highly competitive social market economy” (EC, 2011, p. 3).

The global crisis has also changed the corporate priorities in addressing CSR issues, moving the spotlight from environmental issues to social issues. In the extensive category of the social issues that the companies may address, one key-element refers to consolidating the sustainability of their human resources management (HRM) – a term that could be defined as ‘the sum of corporate actions and measures for recruiting, selecting, managing, training, evaluating and motivating the personnel’. This is why the employee-related CSR policies are gaining more ground in the specialized literature and the empirical evidence.

Analysing the specialized literature within the field, a bidirectional relationship could be established between corporate social responsibility (CSR) and human resource management

(HRM): on one hand, the involvement of the employees is a critical factor for the success of the CSR campaigns and, on the other hand, the companies should specifically implement coherent and dedicated CSR policies for their employees (a prerequisite for assuring the CSR engagement of the employees).

The above relationship is approached in a different way at international level: the efforts in the most developed countries are mainly directed to attracting the employees in supporting the CSR agenda of the companies in order to reaffirm the corporate legitimacy (e.g. Strandberg 2009, for a description of the situation in Canada), meanwhile in the rest of the countries the companies are striving for satisfying the needs of their employees by including CSR in their HR policies. The present research – conducted at the level of the Central and Southeastern Europe (Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) – emphasizes the role of CSR in developing a highly articulated HR policy, taking into account the decisive role that the employees play in strengthening the corporate competitiveness and the need of the business organizations to put a greater focus on their employee-dedicated CSR measures.

## **2. LITERATURE REVIEW ON CSR AND HRM**

The potential of CSR to increase corporate competitiveness and to bring benefits in terms of risk management, cost savings, access to capital, customer relationships, human resource management, and innovation capacity (EC 2011, p. 3) is now generally acknowledged (see, for example, Iamandi 2011, pp. 180-187, Iamandi 2010, pp. 290-294, Popa & Filip 1999, p. 257). More than that, some of the most significant changes in the management science emphasized in the specialized literature (Nicolescu 2001) could be easily associated with, or derived from, the concept of CSR and applied specifically to HRM field: innovation, flexibility, motivation and participative management.

The key advantages that CSR brings to the responsible companies in terms of HRM refer to attracting and keeping high quality and well-motivated employees that could internalize and transmit further on the corporate values in their interactions with other stakeholders. The series of CSR measures for employees is broad and it depends on the corporate sectors and activities performed by employees. In this line of thinking, CSR at the workplace covers everything ranging from available training and further education, preventive health measures and risk management to worker participation, equal opportunities, compatibility of career and family, measures against workplace harassment and specific CSR actions for employees such as corporate volunteering (Inno Train CSR). The employee-dedicated CSR measures reflect at least the following six areas:

- Improvement of labour conditions, including health, safety and security at work, and enhancement of job satisfaction;
- Work-life balance;
- Equal opportunities and promotion of diversity at the workplace;
- Training and personal development, including career planning;
- Informing and participation of employees in the decision-making process;
- Responsible and fair remuneration and/or financial support for the employees (e.g. pension systems, interest-free loans etc.) (Austrian Institute for SME Research 2007, p.4).

The recognition of corporate involvement in specific CSR areas is often complemented with a quantitative approach required by third-party auditors. One of the most well-known methods for measuring and evaluating the corporate involvement is represented by the Global Reporting Initiative (GRI 2011) Sustainability Guidelines, presenting a set of complete indicators that companies could use in order to determine their level of compliance in the following CSR fields: Economic, Environmental and Social ('Labour Practices and Decent

Work’, ‘Human Rights’, ‘Society’ and ‘Product Responsibility’). The employee-dedicated CSR measures fall under the categories of indicators ‘Labour Practices and Decent Work’ (Employment, Labour-Management Relations, Occupational Health and Safety, Training and Education, Diversity and Equal Opportunity, Equal Remuneration for Women and Men) and ‘Human Rights’ (Investment and Procurement Practices, Non-discrimination, Freedom of Association and Collective Bargaining, Child Labour, Prevention of Forced and Compulsory Labour, Security Practices, Indigenous Rights, Assessment, Remediation)(GRI2011, p. 30,33).

### 3. EMPIRICAL ANALYSIS OF THE CSR-HR CONTINUUM IN CENTRAL AND SOUTHEASTERN EUROPE

Our empirical analysis examined the CSR-HR continuum by focusing on an original composite index, the *CSR-HR-DAW Index*, and on its six pillars, reflecting the described basic employee-dedicated CSR measures. Therefore, the CSR-HR binomial was investigated both from an overall perspective (taking into account revenues from sales, country of origin, operating country and industry field) and a particular perspective (analysing the individual components of the index).

#### 3.1. DATA AND RESEARCH METHODOLOGY

In order to study the CSR-HR continuum, our research focused on top companies from the following seven Central and Southeastern Europe countries: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia. More precisely, we chose strictly the first five companies, from each country, ranked by revenues from sales 2009 within the Deloitte CE Top 500 Companies Ranking Report 2010 (Deloitte 2010), so as to reflect the economic performance component of our research. For revealing the CSR-HR continuum, we took into account six fundamental employee-oriented measures, entitled either ‘components’ or ‘pillars’: *Improvement of labour conditions & job satisfaction, Work-private life balance, Equal opportunities & promotion of diversity, Personnel training & development, Participation of employees in the decision-making process, and Fair payment & financial support for employees*. The data regarding these measures was collected from several available public documents and on-line sources, such as: the CSR reports, the Sustainability reports, the CSR/Sustainability sections in the corporate annual reports, the corporate codes of ethical conduct and other on-line sources on the companies’ websites.

Therefore, our original approach consisted in developing four ***CSR-HR composite indices*** by grading the six before mentioned pillars, at the level of each of the 35 companies, while considering the following assessment criteria:

- 0, for no mentioning of the pillar;
- 1, for an average application of the pillar, compared within the overall sample;
- 2, for an excellent application of the pillar, compared within the overall sample.

Further, the method of computation consisted in averaging the six values, for each company, in order that the maximum value of each CSR-HR composite index be equal to 1. Taking into account that we are interested in the development stage reached by the companies from the point of view of CSR in HR, in our research we only took into account the most recent publicly and freely available CSR sources from the previously mentioned ones. Furthermore, taking into account that CSR could also strategically reveal the image of the company and, correspondingly, considering that there are many companies that report every two years on their sustainability strategies, we reflected the “Data Availability” criterion, by weighting the *CSR-HR composite indices* as follows:

- 1.0, when the data was available for the 2010-2011 period;

- 0.9, when the data was available for the 2009-2010 period;
- 0.8, when the data was available for the 2008-2009 period.

Thus, we developed the following *CSR-HR-DAW Composite Indices* (Corporate Social Responsibility – Human Resources – Data Availability Weighted Indices):

- *The Global CSR-HR-DAW Index*, an overall index that encompasses *the performance of all the six pillars*;
- *The Broad Development CSR-HR-DAW Index*, built as an aggregation of the *Personnel training & development* and the *Work-private life balance* components;
- *The Inclusive Concern CSR-HR-DAW Index*, derived from combination of the *Improvement of labour conditions & job satisfaction* and the *Participation of employees in the decision-making process* components;
- *The Right Reward CSR-HR-DAW Index*, including the *Fair payment & financial support for employees* and the *Equal opportunities & promotion of diversity* components.

While the first index aims at measuring the CSR-HR continuum holistically, the last three indices target to quantify the CSR in HR by considering a more analytic approach and focusing on three broad constituents (the assistance that the employees receive for their comprehensive development, the consideration of the employees in their job life and the allocation of the remuneration benefits received by employees).

In addition, we weighted each of the 6 pillars by considering the data availability criterion and we developed individual corporate scores, as follows:

- *Improvement of labour conditions & job satisfaction – DAW*;
- *Work-private life balance – DAW*;
- *Equal opportunities & promotion of diversity – DAW*;
- *Personnel training & development – DAW*;
- *Participation of employees in the decision-making process – DAW*;
- *Fair payment & financial support for employees – DAW*.

Taking into account the previously described CSR-HR continuum measures, we developed our research investigation on two levels:

- 1) We explored the performance of the CSR-HR-DAW Indices within a twofold analysis:
  - in relation with an economic variable (i.e. revenues from sales);
  - by comparing their average values at industry, country of origin and operating country levels.
- 2) We examined the performance of each of the six pillars relative to the same economic variable – revenues from sales.

## **3.2. MAIN FINDINGS**

Firstly, as previously specified, we analysed the CSR-HR continuum by focusing on the performance of the four composite indices and, secondly, by emphasizing some evidences regarding each of the six CSR-HR components.

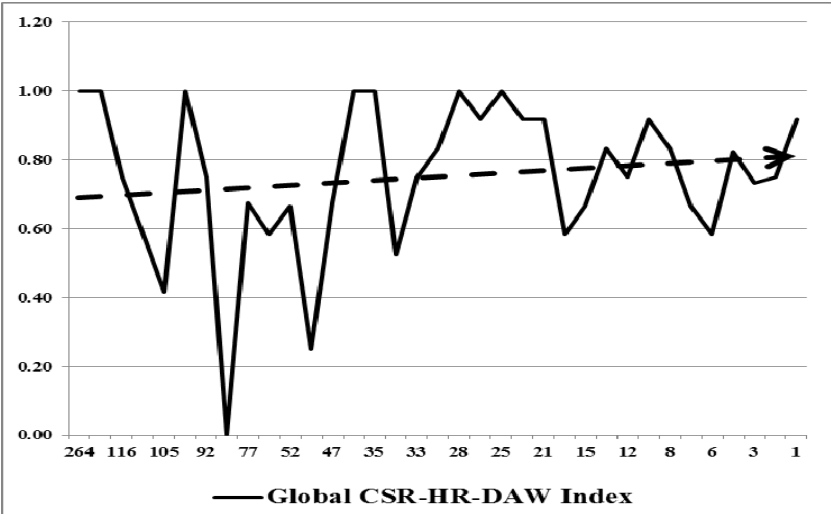
### **3.2.1. The performance of the CSR-HR-DAW Indices**

As *Figure 1* illustrates, it seems that the index reflecting the global CSR-HR continuum at the level of the analysed companies exhibits a slight positive trend with respect to the rank of the companies within the Deloitte CE Top 500 Companies, developed by considering revenues from sales. This finding reflects that the economic performance of the companies,



mirrored by the revenues from sales, encourages the overall CSR measures targeting the employees of the 35 selected companies from Central and Southeastern Europe countries.

**Figure 1: The performance of the Global CSR-HR-DAW Index**

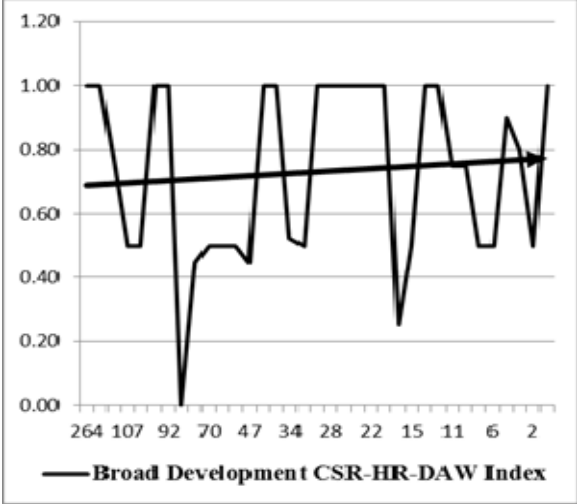


Source: Authors’ representation using Deloitte 2010 report data and various CSR reporting sources.

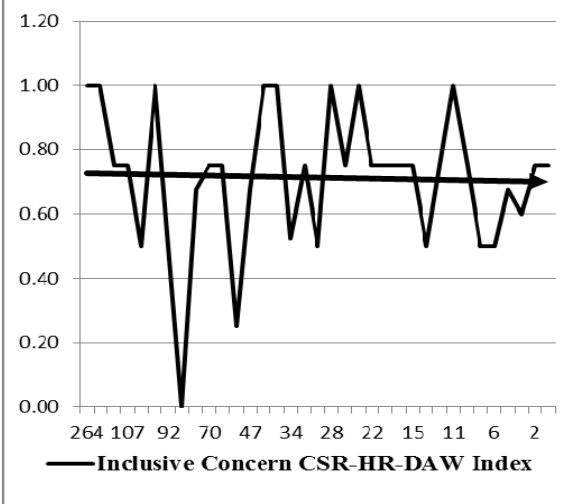
While taking into account the three broad constituent indices, the analysis conducted considering the rank of the companies according to their revenues from sales (see *Figure 2*) shows that The Broad Development CSR-HR-DAW Index and the Right Reward CSR-HR-DAW Index exhibit a moderate and a strong positive trend, respectively, while the Inclusive Concern CSR-HR-DAW Index displays a moderate negative trend. Consequently, there seems that the economic performance of the companies boosts both the broad development and the right reward measures for employees, at the expense of the inclusive concern measures for employees. The explanation resides in the willingness of the top analysed companies in Central and Southeastern Europe countries for dedicating more financial resources in support of their employees or for promoting equal opportunities at work with a direct pragmatic corporate interest than to encourage the employees to involve themselves in the decision-making process.

**Figure 2: The performance of the Constituent CSR-HR-DAW Indices**

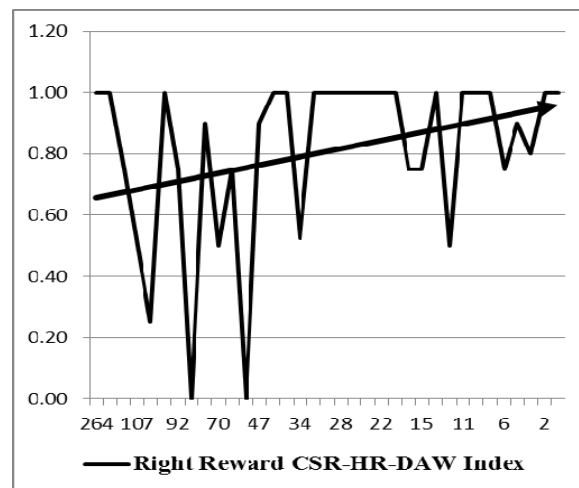
**Figure 2.1: The Broad Development CSR-HR-DAW Index**



**Figure 2.2: The Inclusive Concern CSR-HR-DAW Index**



**Figure 2.3: The Right Reward CSR-HR-DAW Index**



Source: Authors’ representation using Deloitte 2010 report data and various CSR reporting sources.

When considering the average value of the global index at industrial level, as it could be noticed in *Table 1*, the analysis of the 35 selected companies revealed that the leading industry in terms of overall CSR-HR measures is the Technology, Media & Telecommunications one. However, taking into account that within our sample this industry accounts only for two companies, the high score might be a consequence of this circumstance and, therefore, the score is likely to evidence signs of bias.

We consider more relevant the scores obtained for the other three industries (Energy & Resources, Manufacturing and Consumer Business & Transportation). Firstly, we notice that the three values are quite similar, fact that reflects that the considered top companies, on average, take into account the employee-oriented CSR measures regardless the industry. Secondly, the average scores are fairly high, suggesting again that, on average, the managers within these companies acknowledge their HR as a central stakeholder and asset and not only as merely as workforce.

**Table 1: The CSR-HR-DAW Industry Average Indices**

<b>Industry</b>	<b>Energy &amp; Resources</b>	<b>Manufacturing</b>	<b>Consumer Business &amp; Transport</b>	<b>Technology, Media &amp; Telecomm.</b>
Global CSR-HR-DAW Industry Average Index	0.72	0.78	0.74	0.92
Broad Development CSR-HR-DAW Industry Average Index	0.65	0.84	0.75	0.88
Inclusive Concern CSR-HR-DAW Industry Average Index	0.69	0.69	0.75	0.88
Right Reward CSR-HR-DAW Industry Average Index	0.82	0.82	0.71	1.00
Number of companies	17	10	6	2

Source: Authors’ representation using Deloitte 2010 report data and various CSR reporting sources.

Moreover, if exploring the evolution of the three broad constituent indices, as previously shown, the Technology, Media & Telecommunications industry seems to be the leading one, regardless the examined index. However, considering again the small sample criterion, the result could be considered as biased. Therefore, our attention is directed toward the remaining industries. However, we cannot determine a clear pattern: when implementing broad

development measures for employees, the leading industries seem to be the Manufacturing one, when considering the right reward measures for employees, both the Energy & Resources and the Manufacturing domains of activity lead, while when conducting inclusive concern measures for employees the Consumer Business & Transportation sector dominates.

**Table 2: The CSR-HR-DAW Country of Origin Average Indices**

<b>Company</b>	<b>Foreign</b>	<b>National</b>
Global CSR-HR-DAW Country of Origin Average Index	0.84	0.67
Broad Development CSR-HR-DAW Country of Origin Average Index	0.85	0.63
Inclusive Concern CSR-HR-DAW Country of Origin Average Index	0.76	0.67
Right Reward CSR-HR-DAW Country of Origin Average Index	0.93	0.71
Number of companies	16	19

Source: Authors' representation using Deloitte 2010 report data and various CSR reporting sources.

When analysing the CSR-HR continuum from the perspective of the country of origin, both at general and constituents levels, the results, displayed in *Table 2*, indicate that the foreign companies within the analysed Central and Southeastern Europe countries show, indeed, more propensity towards employee-focused actions. Taking into account that, with few exceptions, the foreign studied companies are from highly developed countries, we consider that this result might be the consequence of the general guidelines reflected in the CSR group policy and corporate culture.

As far as the score of the average indices for the national companies are concerned, though sensitively lower than their counterparts, they reveal that these companies are focused on applying human resources CSR measures, while still being below the average value of the index, specifically 0.75. In addition, one can notice that the right reward measures for employees are the most important CSR-HR targets, regardless the country of origin, and this finding could be justified by adding that well-paid employees are usually more satisfied and more dedicated to the companies they are working for.

**Table 3: The CSR-HR-DAW Operating Country Average Indices**

<b>Country</b>	<b>Global CSR-HR-DAW Country Average Index</b>	<b>Broad Development CSR-HR-DAW Country Average Index</b>	<b>Inclusive Concern CSR-HR-DAW Country Average Index</b>	<b>Right Reward CSR-HR-DAW Country Average Index</b>
Bulgaria	0.67	0.58	0.67	0.76
Romania	0.72	0.80	0.70	0.65
Czech Republic	0.75	0.69	0.71	0.84
Poland	0.75	0.75	0.65	0.85
Slovenia	0.75	0.75	0.80	0.70
Slovakia	0.77	0.71	0.76	0.86
Hungary	0.85	0.85	0.70	1.00

Source: Authors' representation using Deloitte 2010 report data and various CSR reporting sources.

The analysis conducted from the overall perspective at the operating country level, displayed in *Table 3*, reflects that the companies applying more intensely CSR-HR measures

are situated in Hungary. However, this could be explained by the fact that, apart from one company, all the other four are foreign global companies, conducting powerful CSR policies. Another country that has an above average score is Slovakia. Taking into account that within the analysed sample in Slovakia two companies are also well-known multinationals, with scores closed to unit, this highly compensates the lower scores of the local companies. As one can notice, three countries have the average score (Czech Republic, Poland and Slovenia). Like in the case of the Slovakian top companies, for the Czech and Polish top companies there are two foreign and three local ones. However, the foreign companies' scores are not that high to compensate the lower local scores, and, in some cases, are even lower.

An interesting example is Slovenia because all the analysed companies are local. Therefore, it could be deduced that the top companies within this country have quite strongly focused on employee-CSR policies. The last group of top companies is represented by the ones from Romania and Bulgaria, having below average scores. However, it could be noticed that the top Romanian companies' average score is close to the general average value, result reflecting the presence of two important foreign companies with high scores and a score equal to unity of a local company. When examining the case of Bulgaria, the result is not surprising considering that the only local company has a score equal to 0.

When moving to the three constituent indices, Hungary seems to dominate the top when applying broad development and right reward measures for employees. Clustering the results, we formulate the following three general conclusions:

(1) Hungary and Romania have the highest score for the broad development measures for employees, Poland and Slovenia are in the middle of the top, while Bulgaria, the Czech Republic and Slovakia seem to have a score below average when discussing this class of measures for employees;

(2) For the inclusive concern measures for employees, the leading country is Slovenia, while Slovakia is the other country of the top with a score value over 0.75 for the same index. Consequently, the companies from all the other analysed countries seem to be, on average, less interested in adopting inclusive concern oriented measures for their employees;

(3) As far as the right reward measures for employees are concerned, 5 countries from our sample seem to be interested in thoroughly implementing these measures (Bulgaria, Czech Republic, Poland, Slovakia and Hungary).

### 3.2.2. The performance of the CSR-HR-DAW Pillars

The first results of the pillar-grounded analysis are displayed in *Table 4* and reflect that four of the *CSR-HR-DAW* six pillars have an average value above the 0.75 score.

**Table 4: The CSR-HR-DAW Pillars Average**

<b>Pillar</b>	<b>CSR-HR-DAW Pillars Average</b>
Participation of employees in the decision-making process – DAW	0.53
Work-private life balance – DAW	0.56
Equal opportunities & promotion of diversity – DAW	0.81
Fair payment & financial support for employees – DAW	0.84
Improvement of labour conditions & job satisfaction – DAW	0.93
Personnel training & development – DAW	0.94

Source: Authors' representation using Deloitte 2010 report data and various CSR reporting sources.

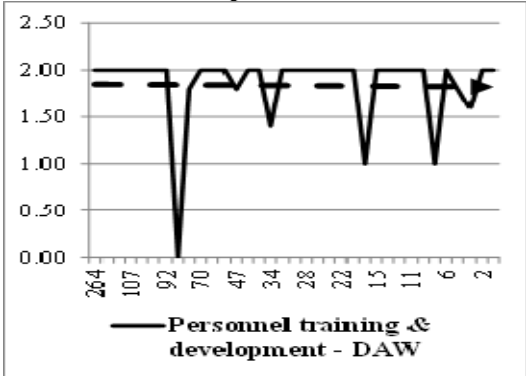
The results are encouraging, reflecting that the overall index is not merely a consequence of some high scored components, but a reflection of a tendency towards a consolidated strategy of employee-oriented CSR measures within the Central and Southeastern Europe top

analysed companies. The results are not surprising in terms of preferred pillars within the analysed countries as, being companies from emerging and frontier countries, one can expect that these ones apply mostly the basic and strongly company-related measures. Therefore, one could expect that the pillars regarding the work-private life balance and those reflecting the involvement in the decision-making process to receive, on average, less attention, for the time being.

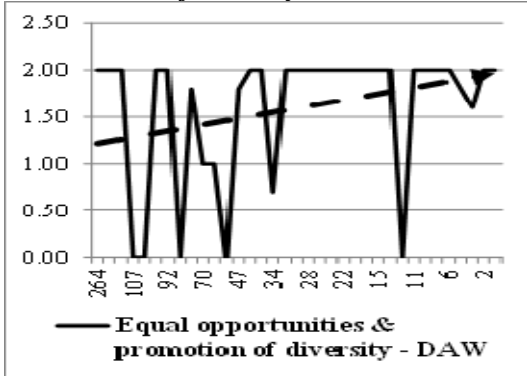
Regarding the analysis performed at the level of each of the six pillars, considering the rank of the companies within the Deloitte CE 2010 Top 500 Companies in terms of revenues from sales, the results are displayed in *Figure 3* (*Figures 3.1* up to *Figures 3.6*). Source: Authors' representation using Deloitte 2010 report data and various CSR reporting sources

**Figure 3: The performance of the CSR-HR-DAW Pillars**

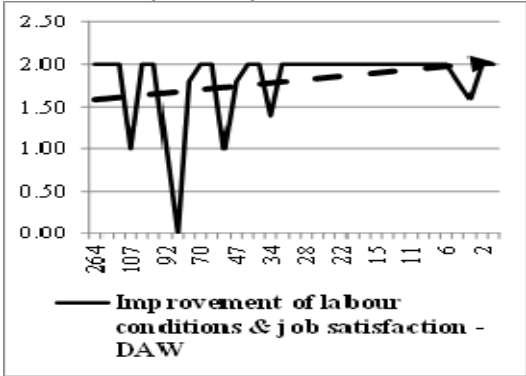
**Figure 3.1: Personnel training & development – DAW**



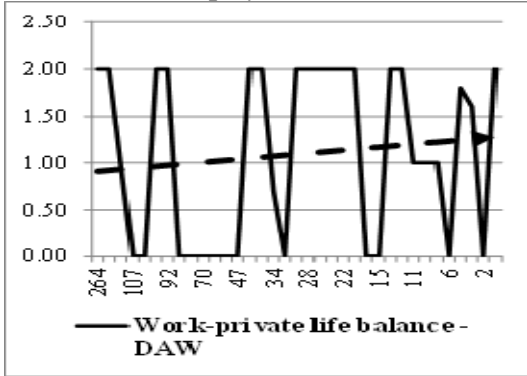
**Figure 3.4: Equal opportunities & promotion of diversity – DAW**



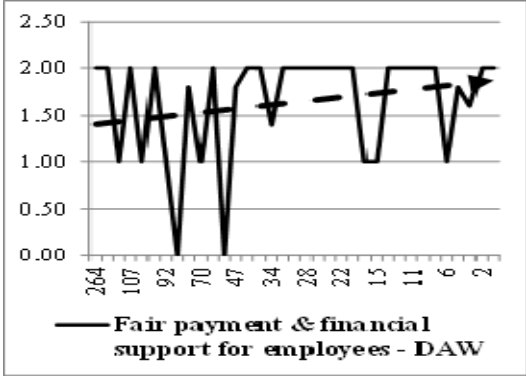
**Figure 3.2: Improvement of labour conditions & job satisfaction – DAW**



**Figure 3.5: Work-private life balance for employees – DAW**



**Figure 3.3: Fair payment & financial support for employees – DAW**



**Figure 3.6: Participation of employees in the decision-making process – DAW**



As it could be noticed in *Figures 3.2, 3.3, 3.4 and 3.5*, the pillars regarding *Improvement of labour conditions & job satisfaction, Fair payment & financial support for employees, Equal opportunities & promotion of diversity* and *Work-private life balance* seem to unveil a slight positive trend with respect to the rank of the company within the Deloitte CE Top 500 Companies in terms of revenues from sales. These results reveal that the economic performance of the companies, reflected by the revenues from sales, boosts the before mentioned actions targeting the employees of the companies from the Central and Southeastern Europe countries. The other two pillars, *Personnel training & development* and *Participation of employees in the decision-making process*, as can be noticed in *Figure 3.1 and 3.6*, seem to have a negative trend with respect to the company's rank, which could be a result of the fact that the higher the economic performance, the more company will invest in some or all of the other four pillars. Another possible interpretation of this result could be the high degree of centralization of the decision-making in case of very large companies, that do not afford to share the strategic decisions with their employees, but prefer to keep them at the top management level. In the end, it could be concluded that leading companies in Central and Southeastern Europe countries, considered according to their increasing rank in the Deloitte CE Top 500 Companies, tend to allocate a higher importance to equal opportunities and promotion of diversity measures, to decrease the implication of their employees in the decision-making process and to equally consider personnel training and development measures no matter their position in the top, this last type of measures being considered an essential one for their business activities (this conclusion is also supported by the figures presented in *Table 4*).

#### **4. RECOMMENDATIONS AND CONCLUSIONS**

With reference to the relationship between CSR and HR, two main trends could be identified at global level: the first one, considered as elementary, refers to the CSR measures that the companies may apply for their employees in order to increase their retention and satisfaction degree, recognizing the importance of the personnel in assuring the corporate competitiveness (our empirical analysis is included in this first category); the second one, regarded as more complex than the former one, refers to the promotion of corporate values and CSR policies through the employees that are already well-motivated in the companies and are now communicating further on the model of corporate involvement in ecological, social and ethical issues (this approach comes across rather in the most developed countries of the world, that have already achieved a specific level of economic performance at corporate and national level and are strongly motivating their employees through all six types of measures presented in this research).

The empirical analysis conducted for the 35 companies pertaining to Central and Southeastern Europe countries emphasized that, in the last years, major corporate advancements took place in terms of including and thoroughly applying employee-related CSR measures in the business strategies of the companies. The economic and financial performance of the analysed companies in Central and Southeastern Europe countries encourages the overall employee-related CSR measures. At this point, although the need for more sophisticated employee-dedicated measures is strongly affirmed at corporate and national level, fair payment and financial support for employees, as well as equal opportunities and promotion of diversity seem to be the top issues of corporate agendas in the field, especially in the analysed countries. In the coming years, more focus is needed on those specific measures targeting the involvement of the employees in the decision-making process and a better work-life balance, considered to be more sensitive areas. Both the analyses of the

performance of the CSR-HR-DAW Indices and the CSR-HR-DAW Pillars confirmed these results.

The general conclusion of the present research is aimed at reaffirming the strong engagement of the analysed companies in Central and Southeastern Europe countries in the employee-related CSR measures in the last years, as a solid recognition of the role played by employees in strengthening corporate competitiveness. Along these lines, companies are equally interested in promoting the interests of their employees and are becoming closer to the strategic objective of the European Commission of a “highly competitive social market economy”.

#### NOTE

The two authors contributed equally to this work. The present paper represents an improved and updated version of Iamandi, IE & Constantin, LG 2012: ‘Consolidating Human Resource Management through Corporate Social Responsibility Practices in Central and Southeastern Europe’, paper presented in the *International Conference on Management of Human Resources 2012: Management – Leadership – Strategy – Competitiveness*, Gödöllő, Hungary, 14-15<sup>th</sup> June 2012, and published in the *Proceedings of the International Conference on Management of Human Resources 2012: Management – Leadership – Strategy – Competitiveness* (Editor: Illés B. Cs.), Volume I, Rosental Kft. Publishing House, Gödöllő, Hungary, 14-15<sup>th</sup> June 2012, pp. 241-248.

#### ACKNOWLEDGEMENTS

This work was co-financed from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/89/1.5/S/59184 “Performance and Excellence in Postdoctoral Research in Romanian Economics Science Domain”.

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*Andrea Ubrežiová, Iveta Ubrežiová, Elena Horská*

#### **4.2 THE CORPORATE SOCIAL RESPONSIBILITY: THE CASE STUDY OF THE WATER AS A STRATEGIC COMMODITY FOR FUTURE**

**Summary:** The main goal of this paper is to focus on the issues related to water. Humans have always been connected to the nature and natural resources. There is no doubt that humanity cannot live without nature and it has to be a social priority to take care of the nature and natural resources. This paper inquires about the current situation of world's water supply and the differences between water withdrawal and consumption between countries. There is also a tremendous problem with growing demand, diminishing water supply and negative features connected with water wasting. Necessary awareness of companies in decreasing the negative phenomena by corporate social responsibility and by participating in international aimed programmes related to improvement the care of the world ecosystems (including water sources). In the case study, you will be given some examples how a big international company as Coca-Cola participates in international programs and by using tools of corporate social responsibility is fighting against the diminishing water supply issue. The significance of Corporate Social Responsibility has changed from "voluntary approach" towards one of the important tools used to improve performance and increase competitiveness of companies. The aim of this article is to provide a theoretical approach on how should companies proceed in order to create successful implementation of CSR into management processes leading towards sustainable performance of a company. Primary and secondary data have been analyzed to get an overview on current theoretical approaches in terms of CSR implementation in international companies. The findings indicate the effects CSR implementation and strategic approach in international management can bring to overall performance of international companies.

**Keywords:** corporate social responsibility (CSR), international trade, natural resources, scarcity, water, water withdrawal

### **1. INTRODUCTION**

The significance of Corporate Social Responsibility has changed from "voluntary approach" towards one of the important tools used to improve performance and increase competitiveness of companies nowadays. To achieve positive impact of CSR on a company, management should devote sufficient focus on strategic planning and implementation of CSR into all management processes conducted in a company. The aim of this article is to provide a theoretical approach on how should companies proceed in order to create successful implementation of CSR into management processes leading towards sustainable performance of a company. Primary and secondary data have been analyzed on in order to get an overview on current theoretical approaches in terms of CSR implementation in international companies. The findings indicate the effects CSR implementation and strategic approach in international management can bring to overall performance of international companies.

First decade of the 21 century can be characterized by rapid development of global society as well as by remarkable growth of global issues, both on environmental and social level. These issues have strengthened the necessity to develop and apply more systematic and sustainable approach towards business activities realized on international and local level. Therefore, Corporate Social Responsibility (CSR) has become an important tool, many companies have decided to apply considering their business activities on local as well as global markets. Business world has undergone several changes over the last decades, considering the role of multinational companies (MNCs) as well as small-and-medium

enterprises (SMEs). Beside maximization of company's profit, current development requires focusing on systematic and sustainable approach in doing business more than before. Moreover, MNCs and SMEs should focus not only on profit (primary bottom line), but on people (second bottom line) and planet (third bottom line) aspects of their business activities as well (Bielik, Smutka, Horská, 2010). Therefore Corporate Social Responsibility (CSR) has become an important tool used to achieve sustainable business approach. The World Business Council for Sustainable Development (WBCSD) has defined the CSR as a business commitment that contributes to a sustainable economic development via team work with employees and its representatives, families, local and public communities in order to improve the quality of life by beneficial ways both for the business itself and the development (Jamali, 2006). Moreover companies should take seriously their 'obligations to society' and actively fulfil them (Godiwalla - Damanpour, 2006). In general, all CSR definition agree that the concept of CSR in the means of business world should take into consideration financial, environmental and social aspects and that sustainable development lies in the synergy of all three aspects (Hidayati, 2011).

The report Green Paper distinguishes two dimensions of CSR, internal and external. Within the company, internal CSR includes HR management, health and safety at work, change management, etc. External CSR extends beyond the doors of a company and involves local communities, a wide range of stakeholders in addition to employees and shareholders as business partners, customers, public authorities, variety of NGOs, etc. (Green Paper, 2005). Furthermore, some authors divide CSR into two categories, responsive and strategic CSR. While responsive CSR is concentrating on acting as a good company citizen, strategic CSR transforms the valued-chained activities of the company into community benefits. Besides, it improves the company strategy in competitive context (Porter-Kramer, 2006). Porter and Kramer claim, that the most strategic CSR occurs, when a company adds a social value to its value proposition, making social impact integral to the overall strategy. Except competitiveness, implementation of CSR in overall company strategy can bring far more advantages as reduction of costs, profit growth, improved access to capital, enhancing of brand and image, loyalty of customer, sales increase, motivation and reduced fluctuation of employees or risk reduction (CSRNETWORK, 2009).

Meanwhile, to demonstrate socially responsible behaviour of a company, corporate social marketing(CSM) is considered to be the 'tool' (Kuldová, 2011). CSM supports Company marketing objectives, market development and increase sales, but it triggers the behaviour change, too (Kotler-Lee, 2004). CSR communication via CSM means not only communicating a company's behaviour through standards and codes of conduct, but also communication very long projects which do not have any evidence of outcome (Birth-Illia-Lurati-Zamparini, 2006). Moreover, Kotler and Lee claim that use of CSM should result not only in company's benefit but in personal behaviour change, followed by consumer behaviour change. Nowadays, still many companies (McDonald's, Tesco Stores SR, Heineken) consider CSM as a tool for building up image. In Slovakia many companies present themselves as socially responsible through sponsoring or charity, which as they claim should not be perceived as a way to strengthen their brand or image. We can assume that use of CSR as PR tool rather confuse consumers than send out a clear message supporting good reputation of a company. Moreover, perception of CSR as a PR tool is common especially among companies, which yet do not have their own CSR departments. Other negative phenomena regarding application of CSR in companies, especially SMEs, is due to the fact CSR is considered as cost center, or companies do not have a time to create and implement relevant CSR strategy in their business as they have to focus on their core business, etc. There is also still the argument presented by Milton Friedman who claims that the only responsibility of a business organization is to its shareholders, to maximize the profit (Robbins-Coulter, 2004). These are

the arguments that often come up because of misunderstanding of a CSR concept or it is perspective from short-term, rather than long-term perspective. The important fact is CSR business strategies require long – run and continuous approach to obtain benefits from CSR in the future.

## 2. MATERIAL AND METHODOLOGY

The main attention of submitted paper is to explain the Corporate Social Responsibility (CSR) from the viewpoint of the water as a strategic commodity for future. For the purpose of the world trade in water analysis, the authors used the World Trade Organisation's foreign trade database and the United Nations' foreign trade database (UN COMTRADE) as the main information sources for this paper. The world trade with water is not concentrated only to non-sparkling fresh water but also include other beverages under commodity group HS22 (Beverages, spirits and vinegar) that can be divided into three commodity subgroups structure: HS 220110 (Mineral and aerated waters not sweetened or flavoured), HS 220190 (Ice, snow and potable water not sweetened or flavoured) and HS 220210 (Beverage waters, sweetened or flavoured. This latter sub-aggregation covers the following: Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavour). In this paper, we use the methods of analysis, synthesis and comparison.

In order to demonstrate the role of CSR as an important tool used by international companies while dealing with solutions of global problems such as water scarcity we chose currently the world's greatest user of water supplies Coca-Cola Company that is running several international projects supporting the sustainable water management and protection of water resources all around the world.

## 3. RESULTS AND DISCUSSION

Water resources are sources of water that are useful to humans. Uses of water include agricultural, industrial, household, recreational and environmental activities. Fresh water plays unsubstitutable role in human population development. The quantity of water is limited, especially fresh water becomes scarce factors. Approximately 97% of water on the Earth is salt water and only 3% of total water capacity is represented by fresh water of which slightly over two thirds is frozen in glaciers and polar ice caps. Fresh water is a renewable resource, yet the world's supply of clean, fresh water is steadily decreasing. Water demand already exceeds supply in many parts of the world and as the world population continues to rise, so too does the water demand.

The current water consumption is mainly divided into these 3 sectors:

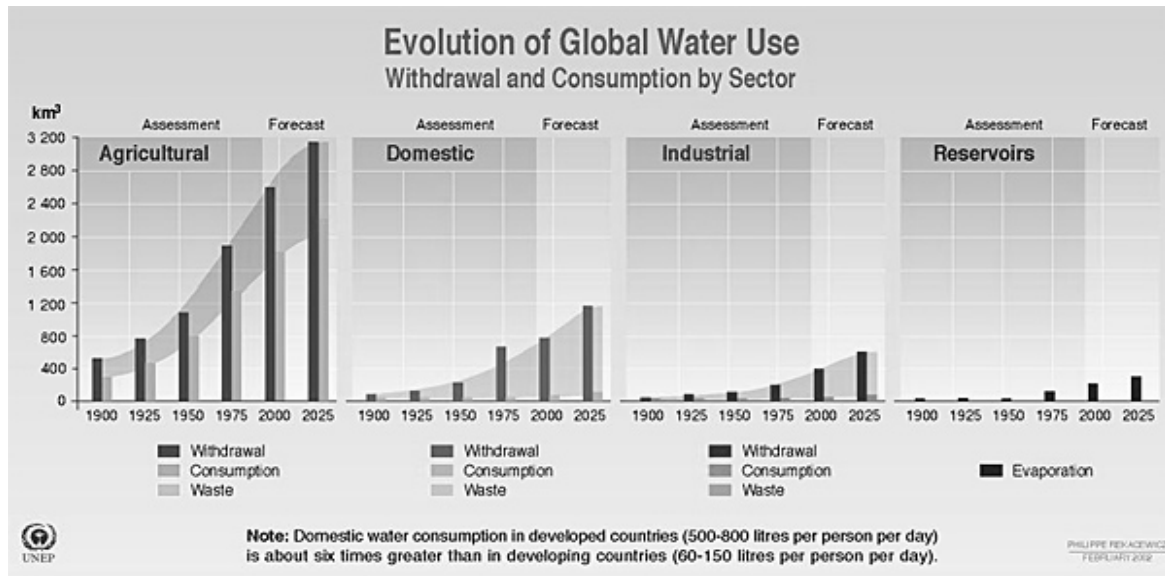
- Agriculture- it is estimated that 69% of worldwide water use is for irrigation, with 15-35% of irrigation withdrawals being unsustainable.<sup>14</sup> As global populations grow, and as demand for food increases in a world with a fixed water supply, there are efforts underway to learn how to produce more food with less water, through improvements in irrigation methods and technologies, agricultural water management, crop types, and water monitoring.
- Industry- it is estimated that 15% of worldwide water use is industrial. Water is used in many industrial processes and machines. Major industrial users include power plants, which use water for cooling or as a power source (i.e. hydroelectric plants), ore and oil refineries, which use water in chemical processes, and manufacturing plants, which use water as a solvent.

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<sup>14</sup> "WBCSD Water Facts & Trends". <http://www.wbcd.org/includes/getTarget.asp?type=d&id=MTYyNTA>. Retrieved 2009-03-12.

- **Households-** it is estimated that 15% of worldwide water use is for household purposes. These include drinking water, bathing, cooking, sanitation, and gardening. It has been estimated by Peter Gleick<sup>15</sup> at around 50 liters per person per day, excluding water for gardens. The water consumption/withdrawal development during 125 years is presented by Figure 1.

**Figure.1 The water consumption/withdrawal development during 125 years**



Source: UNEP

If we consider water consumption by regions a tremendous differences emerge between developed and developing regions. While the average volume of domestic consumption in developed countries is about 500-800 litres per capita a day, in developing countries it is about 60-150 litres. The huge problem of current fresh water consumption development is the fact that while the volume of fresh water sources is diminishing (during the last two decades, the volume of available fresh water in the world decreased by 30%), demand for fresh water is constantly increasing. If we compare water consumption and withdrawal in 1900 with water consumption and withdrawal in 2000, we can see huge differences. During the last century water withdrawal increased its volume more than six times.

Water pollution is one of the main issues of the world today. The governments of many countries have striven to find solutions to reduce this problem. One of the most important presumptions of prosperity and progress towards the sustainable development is the improvement of care of the world ecosystems (including water sources). Human activity leads to degradation of many ecosystems, while the requirements for “ecosystem services” (for example food, drinking water, environment and so on) grow significantly.

World population has been steadily growing; its consumption patterns are becoming more and more sophisticated. Demand for fresh water has been growing and price of is also increasing. The result of last 20 years development is the reduction of available fresh water sources for human consumption by about more than 30%. Water becomes not only one of the production factors; water becomes also strategic factor for future human society development.

While in 1995 the number of people facing to fresh water scarcity and stress was about 500 million, Currently there is almost 1, 2 billion people suffering from water scarcity that means they do not have proper access to 20-50 liters of daily freshwater, which is minimum set by UN organization. Another 1 billion of people do not have access to the fresh water at

<sup>15</sup> Gleick, P. H., 1996: Water resources. In Encyclopedia of Climate and Weather

reasonable prices (Bielik – Smutka – Horská, 2010). In 2025 the estimated number of people is about 7 billion.

The result of above mentioned development is the fact, that fresh water becomes the important part of world economy. Nowadays fresh water represents the target of huge international investments.

**Table 1: World trade volume of analysed commodity sub-groups (in Kg)**

Year	Total trade in HS 220210, 220110, 220190	Mineral and aerated waters not sweetened or flavoured	Ice, snow and potable water not sweetened or flavoured	Beverage waters, sweetened or flavoured
1996	779 914 694 786	2 968 983 028	774 124 371 000	2 821 340 758
1998	769 089 476 720	3 683 710 027	762 538 214 759	2 867 551 934
2000	735 180 545 695	4 670 263 875	726 535 150 565	3 975 131 255
2002	833 878 246 554	6 010 311 378	822 955 610 561	4 912 324 615
2004	828 111 904 118	6 481 441 634	815 307 235 846	6 323 226 638
2006	737 356 108 833	7 221 526 251	721 988 180 941	8 146 401 641
2008	791 432 730 814	6 112 761 473	777 094 115 858	8 225 853 483

Source: Comtrade, (Bielik, Smutka and Horska, 2010)

This table 1 shows the proportion of all three commodity subgroups in the whole HS22 commodity business. We see that the main pillar of the world fresh water trade – HS 220190 is stable and during the analysed time period almost no significant changes were recorded, in the case of the other two analysed commodity groups significant changes were recorded in the traded volume during the analysed time period (1996-2008).

Later on in the Case study we will enquire about Coca-Cola company producing beverage waters in the third commodity subgroup HS220210 (beverages, sweetened or flavoured) that has recorded in the monitored time period, a growth of traded volume of over 190% (the average value of inter annual growth rate reached almost 9.3%).

On the other hand, it must be emphasized that while the share of “Beverage waters, sweetened or flavoured” is very high, its share in total trade volume is minor – only 1% (in 2008). The characteristic, which distinguishes this commodity group from the other analyzed commodity groups, is unit value development. During the monitored time period, the average unit value of one kilogram of “Beverage waters, sweetened or flavoured” varied between 0.44 USD.kg<sup>-1</sup> and 0.8 USD.kg<sup>-1</sup>. In 2008, the average value of one kilogram of traded “Beverage waters, sweetened or flavoured” (world market) was 0.8 USD.kg<sup>-1</sup>.

The main drivers of world import of “Beverage waters, sweetened or flavoured” are the developed countries. In the analyzed time period, the share of OECD members in total world imports was over 77% (European Union 57%, North America 16%). The shares of developing countries and regions were only minor.

On the other hand, the main drivers of world trade are the OECD members. Their share in world exports is over 80% (European Union 62%, North America 11%). On the basis of this data we can see that world trade (export and import) in “Beverage waters, sweetened or flavoured” is controlled by the developed countries. It must be stressed, however, that the majority of trade operations take place among the developed countries

### 3.1. CORPORATE SOCIAL RESPONSIBILITY

Corporate Social Responsibility (CSR) is the idea that management has broader responsibilities than just to make a profit. Those who embrace the classical economic model content that business's social responsibility is to maximize profits for stockholders. Proponents of the social and economic model disagree saying that business has a responsibility to improve the general quality of life and beyond making profit (Crane and Matten, 2007). According to these authors, the schools of economy are divided into.

Behaviouristical school of economy:

- convinced that the corporation should be more than simply a profit machine.
- business is unavoidably involved in Social issues
- business has the resource to tackle today's societal problems
- a better social means a better environment for doing business
- corporate social action will prevent government intervention

Classical school of economy:

- profit maximalization ensures the efficient use of society's resources.
- as an economic institution business lacks the ability to pursue social goals
- business already has enough power
- Since managers are not elected, they are not directly accountable to the people.

Probably the most established and accepted model of CSR is the four-part model of Corporate Social Responsibility as initially proposed by Archie Carroll. Carroll regards CSR as a multi-layered concept which can be differentiated into four inter-related aspects-economic, legal, ethical, philanthropic responsibilities. He presents these different responsibilities as a consecutive layer within a pyramid, such that true social requires the meeting of all four levels consecutively.

**Figure 2.: Carroll's four-part CSR pyramid**



Source: Crane, A. – Matten, D. (2007)

*Economic responsibilities:* Shareholders demand reasonable return from their investments, employees who want safe and good-paid jobs, customers who demand good quality products at fair price. This first layer is the basis for all the subsequent responsibilities.

*Legal responsibilities:* businesses should abide the law, abiding these standards is a necessary condition for any further reasoning about social responsibility.

*Ethical responsibilities:* These responsibilities oblige corporations to do what is right just, and fair even when they are not compelled to do so by the legal framework

*Philanthropic responsibilities:* Lastly, as the tip of the pyramid the fourth level of CSR looks at the philanthropic responsibilities of corporations. By using this idea in a business context, the model incorporates activities that are within the corporation's discretion to improve the quality of life of employees, local communities, and ultimately society in general.

As was mentioned all four layers of the pyramid has to be fulfilled if the corporation wants to act and be Socially Responsible. In the recent year we could observe the increasing number of national and international companies contributing to the effort of governmental and non - governmental organizations to reduce the water shortage and help to obtain the water for most suffering communities in the world. All activities are provided via numerous international projects. Water scarcity and other global issues belong to the sphere that is managed with assistance of special tool: CSR. It is focusing company's interest and activities in searching of possible solutions of global problems for the future. At the same time it is a respond towards public interest in company decision making processes.

#### 4. CASE STUDY: COCA-COLA COMPANY

The problem of water scarcity has become a serious issue that requires unifying the effort of all the international, national and local policies that need to coordinate the common steps in order to find effective solutions. The main steps were done by UN organization that set the target MDG – reduce the shortage of access to water by 2025 by half. What is more responsible approach towards solving the problem of water shortage is dependant also on the approach of local, national and international companies, mainly in agricultural and food industry that are using great deal of world water supplies in order to satisfy the increasing demand of growing population.

In the recent year, we could observe the increasing number of national and international companies contributing to the effort of governmental and non - governmental organizations to reduce the water shortage and help to obtain the water for most suffering communities in the world. All activities are provided via numerous international projects. Water scarcity and other global issues belong to the sphere that is managed with assistance of special tool: CSR. It is focusing company's interest and activities in searching of possible solutions of global problems for the future. At the same time, it is a respond towards public interest in company decision-making processes.

Well – know international giant Coca-Cola Company is one of the greatest users of water supplies in the world. Established in 1886, it operates in 200 countries, produces 3000 beverage products, and has portfolio of 500 brands. These products include sparkling and still beverages, such as waters, juices and juice drinks, teas, coffees, sports drinks and energy drinks. Coca-Cola products are consumed by 1,6 billion people per day and it placed 10 million machines at all strategic places to meet consumer's requirements around the world. Unit case volume of Coca-Company in 2008 represented 23, 7 billions sold products. Table 2 provides an overview of the financial results in years 2004 -2008 in million US dollars.

*Table 2.: Review of Coca – Cola financial results in years 2004 – 2008 in mil. \$*

	2004	2005	2006	2007	2008
<b>Gross profit</b>	<b>14068</b>	<b>14909</b>	<b>15942</b>	<b>18451</b>	<b>20570</b>
<b>Net income</b>	4847	4872	5080	5981	5807

Source: [www.thecoca-colacompany.com](http://www.thecoca-colacompany.com), 2008

##### 4.1. COCA-COLA COMPANY IN RUSSIA

Coca-Cola was first sold in Russia in 1980, during the Summer Olympic Games in Moscow. In 1994, the country's first plant was opened in Moscow. Currently, 120 different flavour extensions of the 23 brands exist to meet consumer tastes. The Coca-Cola System in Russia - consisting of The Coca-Cola Company and its bottling partner, Coca-Cola Hellenic (CCH) - is one of the country's largest foreign investors, having invested up to US\$1.8 billion



to date in the Russian economy. In 2008, more than 11% of unit case volumes were sold in Russia from the total share of unit case volumes sold in Eurasia.

In terms of water requirements, Coca-Cola Company uses annually approximately 300 billion litres of water to produce sufficient amount of required production. In order to provide successful water management ensuring availability and sustainability of water Coca-Cola has set two main targets:

- to improve water efficiency by 20% by 2012 in comparison to year 2004, through the partnership with WWF,
- at the sufficient level supporting aquatic life, return the water used in their system operations, by the end 2010 via comprehensive wastewater treatment.

What is more, Coca-Cola is focusing its water stewardship on three main areas, included in targets. The first area is aimed at increasing the efficiency (reducing water ratio) while growing their unit case of volume. Secondly, Coca-Cola is dealing with recycling of used water and thirdly is oriented on replenishing water access and watershed restoration and protection. Over the years 2004 – 2008, Coca-Cola reduced its water ratio by more than 9%, from 2, 68 l per product to 2, 43 l per product (from 2, 43 litres of water to produce one litre beverage one litre goes into the beverage itself, 1, 43 litres are used for manufacturing processes such as rinsing, cleaning, and cooling.) The final goal is to reach 2, 17 litres per product by 2012 representing the set target to improve efficiency by 20% Table 3 below is reflecting the volume of water ratio in each year during the period 2004 – 2008.

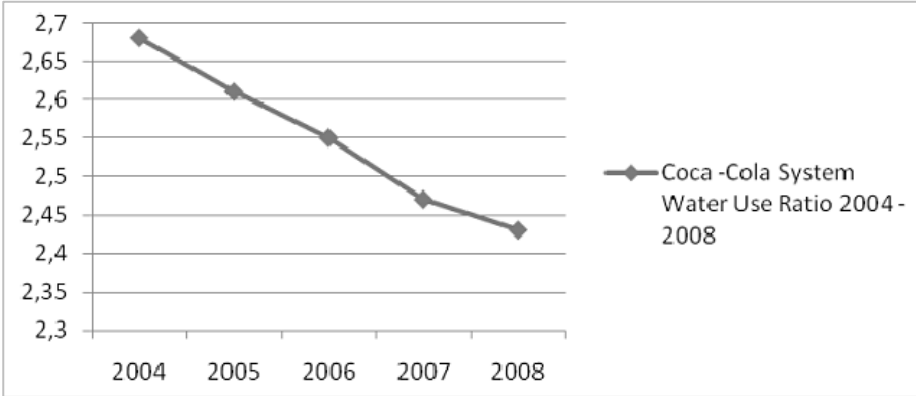
**Table 3: Coca- Cola System Water Use Ratio 2004 - 2008**

Year	Litres of Product
2004	2, 68
2005	2, 61
2006	2, 55
2007	2, 47
2008	2, 43

Source: The Coca-Cola Company Sustainability Review, 2008/2009

In 2007, the Coca-Cola Company has become one of the six companies committed to the CEO Water Mandate through which Coca-Cola is managing their direct operations and supply chains. Moreover, Coca-Cola Company is establishing wide range of worldwide projects based on partnership with many NGOs, committees as well as governments, for instance WWF, UNDP, CARE, or U.S. Agency for International Development. Following chart provides us with the number of partnerships established by Coca-Cola and local communities devoted to the water management around the world (Figure 3).

**Figure 3: Coca- Cola System Water Use Ratio 2004 – 2008**



Source: The Coca-Cola Company Sustainability Review, 2008/2009

For illustration (Table 4) of the Coca-Cola Company project activities, we can mention the launch of the first Volga Day activities based on partnership with UNESCO and Coca-Cola Hellenic in Russia. The main aim was to conserve the lower wetlands of Volga and sustainable development on the delta. Coca-Cola Company has similar supporting activities all over the world.

**Table 4: Number of community water partnerships supported by Coca-Cola Company**

Year	Number of partnerships established between Coca-Cola and communities	Number of countries – projects exist	Share of real existing projects in percentage
2005	17	14	82%
2006	65	38	58%
2007	116	48	41%
2008	203	56	27%

Source: The Coca-Cola Company Sustainability Review, 2008/2009

For instance, in Brazil and Mexico, it cooperates with local governments and NGOs to reforest more than 30,000 hectares of ecosystems to nurture and protect local watersheds. In Thailand, project “RAKNAM” was launched to drive public awareness and action for sustainable water resource management. RAKNAM also provides an estimated 49 million liters of clean water annually to water-stressed communities in northeast Thailand.

As we can see, especially multinational companies are increasing their responsiveness towards the increasing global problem considering their local responsibilities. At the same time international community calls for actions of companies at all levels to align their steps, production decisions with more sustainable and reasonable approaches. Coca-Cola Company realizes that acting sustainable is not just the requirement of international community but it will influence the whole future of company from the perspective of consumers too.

Especially nowadays, consumers are making their decisions based on the character of the company that makes the products. People want to interact with brands and companies that share their values and are doing their part to protect and enhance people’s lives, communities, environment and the world. By engaging in sustainable business practices and helping to improve the lives of people, Coca-Cola can earn the social license to operate and the opportunity to thrive (Coca-Cola Company, Sustainability review, 2009). From this point of view CSR is one of the most efficient tools that help to achieve missions and objectives of the companies. In the same time CSR encourages not only the community growth, but sustainability towards the future as well. Generally said, CSR is a tool that is interconnecting and honours the triple bottom line: people, profit, planet (Bielik – Smutka – Horská, 2010).

## 5. CONCLUSION

According to the paper results demand for water use and consumption is increasing simultaneously with the increase of world’s population. Beside households, great proportion of all water resources is used by industrial (15%) and agricultural (69%) sectors. On one hand demand for water is increasing, on the other hand water supplies all around the world are decreasing. Due to the unsustainable use of water, many parts of the world already suffer from water scarcity and many inhabitants already do not have access to daily fresh drinking water. Over the last two decades, availability of fresh daily water for consumption was decreased by more than 30%.

Water is one of the key economic factors for future development of all the countries around the world. Especially in recent years, it has become a strategic commodity in the world trade. As a consequence, value of water is growing. It is important to notify, that majority of

world trade operations considering water are realized by developed countries. Developing countries play only small role as they suffer from water scarcity. In order to solve the problem of increasing water scarcity, many multinational companies, governmental and non-governmental organizations are undertaking various steps in order to provide sustainable water management towards the future reduce the water shortage and provide fresh water for the most suffering communities in the world. In order to reach set targets companies are using one of the most powerful tools: CSR approach, which at the same time is a respond to a public interest and companies are using it to demonstrate their share on solving the global problems. To demonstrate such behaviour we used case of Coca-Cola Company that is one of the world's users of water supplies and therefore water plays strategic role in its future existence. Coca-Cola is currently running several projects in cooperation with international organizations such UNESCO and many other NGOs to support the sustainable development of water use and protect endangered water areas. Moreover, it focuses its own company activities on increase of water efficiency, recycling and replenishing the watershed.

On the whole, CSR can be perceived as a tool which through public interest is urging companies to provide sustainable business operations considering use of natural resources as water, to protect the environment and to create positive impact on the communities where they operates.

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*Koshiro Matsushita, Masae Takimoto, Miho Miyauchi, Masaaki Takemura*

#### **4.3 AN ANALYSIS OF RISK KNOWLEDGE CREATION FOR EFFECTIVE MANAGEMENT AND LEADERSHIP – CASE STUDIES OF JAPANESE COMPANIES**

**Summary:** Our research discusses risk knowledge creation based on the knowledge creation model introduced by Nonaka and Takeuchi (1995). As in their model, the risk knowledge creation model we propose in this paper consists of four conversion modes: socialization, externalization, combination, and internalization. The purpose of this research is to show the essential factors for effective creation of risk knowledge. We use a case study method to achieve this. The case study we conducted revealed that giving too much weight to socialization is dangerous. That it is important for externalization to analyze common features or factors of many phenomena or incidents. That justifying conducting preventative measures of risk in combination is critical. Finally, that motivating people to keep their tacit risk knowledge is significant for internalization. As a consequence, we concluded that effective risk knowledge creation requires leadership that fosters a culture in which risk is discussed.

**Keywords:** risk, explicit and tacit knowledge, knowledge creation, leadership

### **1. INTRODUCTION**

Companies must take certain risks to improve profits, yet a company's survival can be threatened by excessive risk taking. Therefore, companies should manage serious risks appropriately. However, risk taking is more complex today than ever before. Under the present circumstances, it is commonly assumed that companies take too much risk by overlooking critical variables, underestimating serious risks, and reacting inadequately to risks.

Companies need to regularly review whether they have overlooked risks that may prove important in the future, what kind of impact current risk taking has on business, and how to respond to risks more effectively. In order to achieve these objectives it is necessary for the company to not only ensure that its existing risk knowledge is adequate, but also to continually update and renew its knowledge of risk. That is to say, "risk knowledge creation" is required in modern business. Based on this perspective, it is essential for modern management research to study risk knowledge creation.

Existing studies have already highlighted the importance of risk knowledge. COSO (2004) indicated the importance of the Enterprise Risk Management (ERM) framework, which consists of eight interrelated components. In this framework, risk knowledge (capability, skill, and information) can be positioned in the "internal environment" or "information and communication" section. Although existing risk management research has discussed risk knowledge itself in this manner, few studies have focused on risk knowledge creation.

Some studies have already incorporated the concept of risk as it relates to knowledge or knowledge creation research. For example, Cooper (2003) examined risk in innovation during product development, and Kan and Tsai (2004) analyzed knowledge of health risks. Admittedly, this research was conducted on risk and knowledge or knowledge creation. However, little is actually known about risk knowledge creation, namely the manner in which risk knowledge is created and the factors necessary to promote it.

In order to clarify this subject, we will analyze both the areas of risk management and knowledge creation. In Chapter 2, we will review the definitions of several key concepts as

well as a theory on knowledge creation. In Chapter 3, we will present a framework based on these concepts and this theory. In Chapter 4, we will use case studies to show the essential factors for effective creation of risk knowledge. Finally, in Chapter 5, we will reveal the implications that have become apparent from the above analysis and offer further direction for this area of study.

## **2. REVIEWING KEY CONCEPTS**

### **2.1 RISK AND KNOWLEDGE**

We define risk as the possibility of any adverse impact on the company. Knight (1921) presented a well-known definition of risk, defining it as uncertainty that can be measured in some way. While uncertainty that is difficult to calculate using a quantitative approach was “true uncertainty”. It was presupposed by Knight (1921) that a company gains profits by taking on true uncertainty. However, we do not limit the concept of risk to what can be understood based on occurrence probability measured quantitatively. This is because, whether or not the probability and the potential loss can be calculated by a certain technique, if there is a possibility of any adverse impact on business or profits a company must manage it.

Nonaka and Takeuchi (1995) defined knowledge as “justified true belief” and pointed out that this belief arose from information. Based on the above statement, we define knowledge as information used in decision-making, actions and the belief formed by the information. This definition includes quantitative information, as well as qualitative (meanings, perspectives, principles, and so forth). Knowledge can be divided into explicit knowledge and tacit knowledge. The former is objective knowledge and is easy to transfer because it can easily be expressed in language or a numerical form. The latter is subjective knowledge. Tacit knowledge has the cognitive aspects, such as a mental model and the technical aspects, such as know-how. Whatever the case may be, tacit knowledge is difficult to pass on to others.

### **2.2 KNOWLEDGE CREATION**

According to Nonaka and Takeuchi (1995), knowledge creation is conducted through four conversion modes: socialization, externalization, combination, and internalization (Figure1).

First, socialization creates tacit knowledge from other tacit knowledge through the act of sharing experiences without using language or numbers. The typical example of socialization is OJT (On the Job Training). OJT is carried out to acquire tacit knowledge, such as the know-how of work by observing practices and imitation.

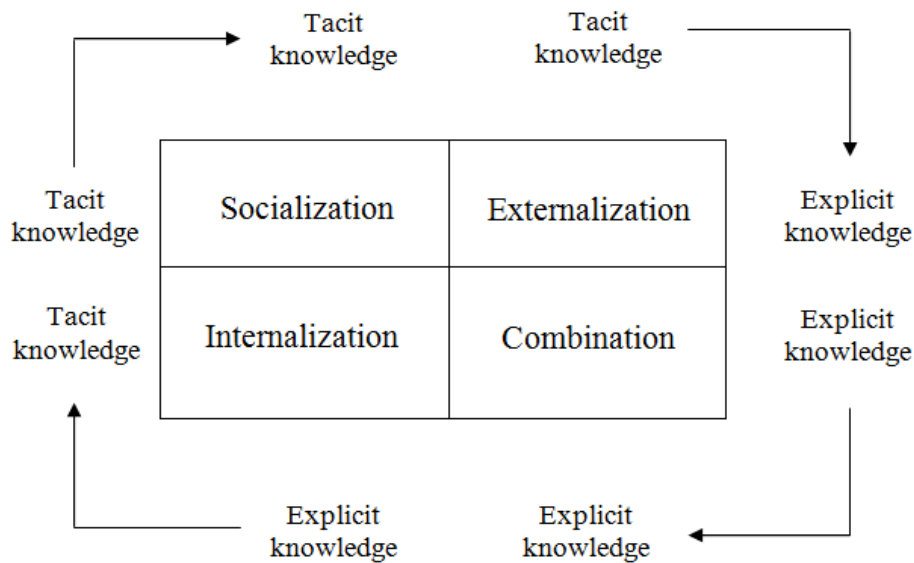
Second, externalization verbalizes tacit knowledge into a clear concept. This is a significant process, since an ambiguous matter will be transferred to a certain analogy, hypothesis, model or similar state. Nonaka and Takeuchi (1995) introduce the example of Matsushita Denki Co.,Ltd. (Now Panasonic. Henceforth, Matsushita Denki), developing a “home-bakery”, which is an automatic bread-baking machine for home use. The idea of more delicious bread was expressed as “Hotel bread”, and the techniques of experienced bakers were showed as the concept of “twisting stretch” for example.

Third, combination organizes explicit knowledge, including categorizing and sharing of it. In addition, it is important to link middle-range concepts with grand concepts. This means that a concrete concept, such as a product concept, is connected with integrative concepts, such as the vision and mission of the company. For example, we could present the practicing sales promotion by using a POS (Point of Sales) system. With a POS system, we could know about the quantity of purchased products and the areas where they were bought. With POS data, we

could learn consumers' trends and thus devise new methods of sales promotion. It creates explicit knowledge from explicit knowledge, so it could be included in combination.

Finally, internalization is the process of changing explicit knowledge into tacit knowledge and gaining tacit knowledge, such as a new mental model or know-how through learning by doing. For example, Nonaka and Takeuchi (1995) presented the case of Matsushita Denki's reduction of working hours. To improve creativity, Matsushita Denki notified people of a reduction in working hours. However, the implementation was not made clear. So they experimentally shortened working hours to 150 hours a month. With this method, workers could get used to working within the shortened time and how to cope with their work instinctively. Such "learning by practice" is relevant to internalization.

**Figure 1: The Model of Knowledge Creation**



Source: Nonaka and Takeuchi (1995) Figure3-2.

If tacit knowledge acquired in the internalization mode is shared with other members of the organization, then it can be socialization. By using the above mentioned examples, new members could adapt to working in a shorter time than before by imitating on OJT. In this way, knowledge creation is practiced by repeating the spiral through four processes that are related to explicit and tacit knowledge.

### 3. RISK KNOWLEDGE CREATION

#### 3.1 EXPLICIT RISK KNOWLEDGE AND TACIT RISK KNOWLEDGE

We can divide risk knowledge into explicit risk knowledge and tacit risk knowledge. Explicit risk knowledge is knowledge, which can be expressed clearly in words, language or figures for addressing risk. For example, a numeric statement of accounts or behaviour standards that describe knowledge necessary for understanding and dealing with risk, such as staff and office regulations, instruction manuals and so forth. Calculated numerical values by such quantitative methods of VaR (Value at Risk) or EaR (Earnings at Risk) also fit in here. When a company has such explicit knowledge and it is ready for use, the company can confirm the risks that are in place, what to pay attention to, and where to place restrictions.

Tacit risk knowledge is difficult to express in language or as a numerical value. It contains things such as a company's attitude to risks, ways of understanding risk, non-numeric evaluation of risk and know-how relating to non-verbal responses.

A company’s attitude to risks and the ways of understanding risk relates to perceptual differences in the risk depending on one’s experience or situation. For example, even if people in a company observe the same product, members of the production department would examine the risk of the products’ design and assembly, whereas members of the sales department would examine the risk relating to customers and the sales method. This might be tacit knowledge because the person themselves does not explicitly know the framework of the risk or mental model.

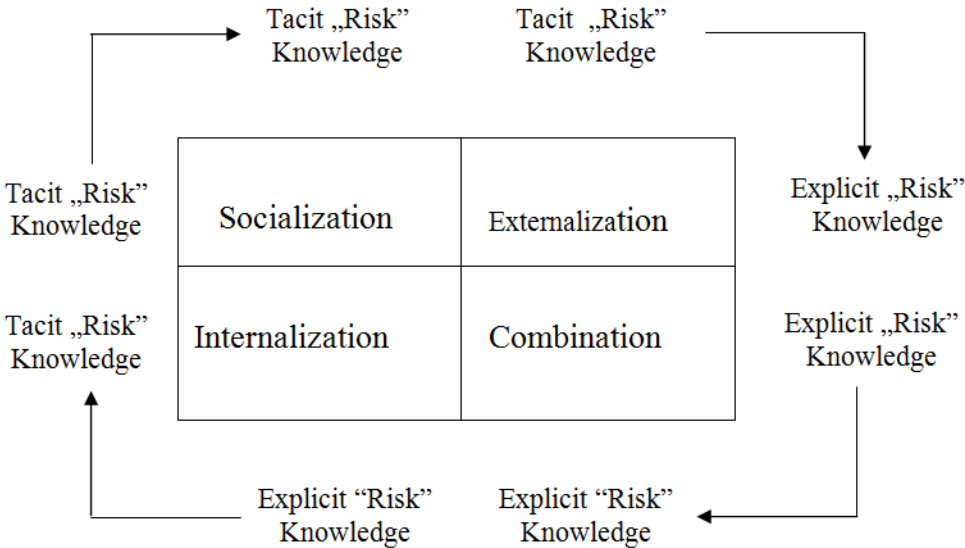
Non-numeric evaluation of risk means to evaluate risk without a numeric method. Usually, a risk evaluation is conducted using a numeric method e.g., about 25%, three times a decade, loss of 100 thousand yen and so on. Whereas someone with abundant experience and technical knowledge might recognize a risk that would cause a loss but the probability or scale of it could not be expressed explicitly. For example, one might feel somewhat unsure about how to speak and behave around the person in charge. It is difficult to explain this to other people, and is not an objective evaluation. Not all kinds of risk can be numerically evaluated, so we could say this is one side of risk evaluation.

Know-how relating to non-verbal responses is a measure of risk that is difficult to convey to other people. For example, inspections carried out by someone who has long-term experience and special skills or preventing reduced motivation by personal charm or skilful speaking. Even if these responses to the risks are dealing with them effectively, it is difficult to express them numerically or document it. Therefore, this is an area of the tacit risk knowledge.

**3.2 THE PROCESS OF RISK KNOWLEDGE CREATION**

We will examine risk knowledge creation using the theory developed by Nonaka and Takeuchi (1995). Figure 2 is the risk knowledge creation model with the added concept of risk to Figure 1. Based on this model, we will consider each four conversion modes. As mentioned at the introduction, the four modes of our model are similar to those of Nonaka and Takeuchi’s (1995) model. However, knowledge which is related to these modes is not explicit knowledge and tacit knowledge in the case of risk knowledge creation but explicit risk knowledge and tacit risk knowledge.

*Figure 2: The Model of Risk Knowledge Creation*



Source: based on Figure 1



Socialization of risk knowledge means to share and learn tacit risk knowledge such as ways of understanding risk, attitudes to risk, and operations know-how regarding avoiding accidents. For example, analyzing cases of failure that occurred in other companies or arguing about possible accidents on any committees related to risk management are socialization. In the activity, some people who have various specializations join together and debate the risk from various viewpoints beyond ones' specialization. In this regard, members should share and modify frameworks or mental models of how to understand risks, through the experience of different ways of understanding of risks or attitudes of addressing risks.

Externalization of risk knowledge makes important tacit risk knowledge into explicit risk knowledge, and thus states it clearly so it can be understood by other people. For example, pointing out events where a risk was not recognized or highlighted in any manuals would be externalization. When nobody except the person who raised the issue recognizes the risk, it is especially critical that externalization of risk knowledge occurs. As since explicit knowledge is easy to transmit to other people those who do not have tacit knowledge can understand new risks through that externalization.

Combination of risk knowledge means to convey and diffuse explicit risk knowledge, as well as creating and systemizing new explicit risk knowledge from it. Furthermore, the importance of relating medium range and grand concepts, as described in Chapter 2.2, is one aspect of combination. It relates individual concepts, which were externalized explicit risk knowledge, and overall concepts, such as management principles or strategies. For example, to update the behaviour standards or to make new manuals by considering accident reports or risk information analyzed by specialists would be combination. Moreover, to convey these new standards or manuals to the members who had not acquired this new explicit knowledge yet would be combination, since notification or diffusion is part of it.

Internalization of risk knowledge means to act based on explicit risk knowledge and then create tacit risk knowledge. We could say it is internalization of risk knowledge to recognize risk and respond to it appropriately without referencing any manual or examples. In addition, to construct a new risk mental model or accumulate corresponding know-how by adapting explicit risk knowledge to other fields or matters is also internalization of risk knowledge.

## **4. CASE STUDIES**

Now, we will analyze how and to what we should pay attention to execute these four processes of risk knowledge creation effectively, illustrated with related examples.

### **4.1 SOCIALIZATION**

Firstly, we should point out the risk that knowledge creation gives too much weight to socialization. Certainly, it is important to share tacit risk knowledge because not all the tacit knowledge can become explicit. However, if people rely excessively on socialization, dangerous methods can be inherited or those who have erroneous beliefs might appear and increase.

In 1999, in Tokai village, Ibaragi prefecture in Japan, JCO Inc. (henceforth JCO) had a criticality accident, a type of nuclear incident, in which two people died and more than 600 people were affected by radiation. In this accident, workers at the job site were not educated adequately and had little knowledge of uranium or criticality (Nanasawa, 2005). This became a key issue. The knowledge necessary for operations and management did not depend solely on education based explicit knowledge, but also greatly on tacit knowledge. If such circumstances where knowledge is not effectively shared, last for a long period of time it is to be expected that a dangerous accident or mistake could occur, as the workers could not

recognize dangers. Furthermore it might be difficult to suggest necessary modifications or corrections for operations, as they had not conveyed explicit knowledge such as background information on operations or management.

## **4.2 EXTERNALIZATION**

Second, we will examine externalization (This case was written based on an interview with Ryosuke Hirai, senior adviser in the CSR Office, RICOH Inc., December 21, 2005). In this paper, we will point out the importance of externalizing vital risks for the firm by analyzing common features or factors of specific phenomena or incidents. An important example to examine is that of RICOH Inc. (henceforth RICOH). In late 1990, RICOH examined various accidents or mistakes which had occurred. They discovered two issues.

The first finding was that many problems had arisen at affiliated companies, yet the parent company assumed responsibility for these problems. Currently RICOH executes risk management as a whole company, but at that time it was only in the main part of the parent company. Therefore, the department of general affairs, which supervised risk management, suggested at a management meeting that it should be necessary for the whole RICOH group to execute risk management. Risk management for a whole company is called ERM (Enterprise Risk Management), and has been examined in many countries since 2000. COSO (2004), which we introduced in chapter 1, is an integrated ERM framework. In late 1990, RICOH could recognize the importance of ERM ahead of the rest of the world.

The second finding was the revelation of patterns of fraud. As a result of the legal department's examination of examples, it became clear that many revelations of patterns of fraud are due to whistle-blowing activities. Therefore the legal department suggested at a management meeting that it should be necessary to build an internal reporting system. That is, the department pointed out that RICOH needed to build a system that could quickly accept risk reports and respond to risk. This system enables a company to recognize problems before the risk becomes reality or at an early stage of incidence.

## **4.3 COMBINATION**

In regards to combination, we can point out the importance of justifying the response to risks. This is because even tackling mistakes or accidents beforehand generates costs such as coordination within the organization or payment of insurance fees. However it is hard to understand the consequences of actions like this directly or in the short term. For example, the ideal result of preventing mistakes is that “nothing” occurs. Therefore, it is not easy to understand the direct relationship between tackling issues beforehand and the results. In other words, initiatives to cope with risk might be given lower priority than actions, which make profit such as R&D, production or sales. Thus, with combination, how to justify preventative measures towards risk becomes an important issue. Below, we examine and compare the cases of Fuji-Xerox Co. Ltd, (henceforth Fuji Xerox) and Sanyo Denki Co. Ltd (henceforth Sanyo Denki).

Fuji-Xerox's company policy takes a serious view on employees' health and safety. Since the first half of the 1990s, they have put in place countermeasures in case of earthquakes. So during the Niigata-Chuetsu Earthquake in 2004, Fuji-Xerox could quickly return to normal conditions while many other companies had to cease operations. On the other hand, a semiconductor factory of Sanyo Denki's subsidiary completely collapsed, and they suffered a loss of 50 billion yen. Sanyo Denki had put off taking out earthquake insurance on the subsidiary as it was concerned over the possibility of not receiving full coverage or compensation. However it is conventional wisdom in the industry to take out insurance

because the production facilities for semiconductors are so expensive (Nihon Keizai Shinbun, December 24, 2004).

What we have to comment on here is why Fuji-Xerox was willing to prepare for earthquakes to its subsidiary and could take detailed measures in advance. A mid-range concept, such as a specific matter on earthquake countermeasures is justified by a perspective from a grand concept, such as a mission statement or corporate strategy. In such circumstances, the cost for coordination or preparation is estimated and viewed as an inevitable cost, so it is easy to progress with arrangements beforehand. Whereas for Sanyo-Denki, insurance costs were not warranted, because of the limiting of the compensation range. So we can conclude that for promoting combination of risk knowledge creation, it is important to justify individual actions needed to address risks (a mid-range concept) from the viewpoint of a mission or strategy of a company(a grand concept).

#### **4.4 INTERNALIZATION**

Forth, as we have clarified in Chapter 2.2, it is necessary to act or learn for internalization. However, any risk no matter how small it is, can cause problems for a firm, such as accidents or mistakes. Therefore, we can say that simulated experiences of accidents or mistakes are necessary. A fire evacuation drill being a typical example. However, activities or training exercises like this can turn into a mere formality. They can become a mere ceremony to confirm explicit knowledge. Furthermore, as time goes by, obtained tacit knowledge or feelings (also tacit) might be lost. To prevent it merely being a formality or losing tacit knowledge, and thus to be able to internalize knowledge effectively, actions should be taken. For example, NEC (Nihon Electric Company) introduces two cases per month in their mail magazine that draw attention to risk issues (Nihon denki, 2004). By introducing a variety of field cases and stimulating interest in people they can prevent simulated experiences turning into a mere formality, control the loss of tacit knowledge and keep people aware of risk, not with huge and low frequency actions but small and high frequency.

If such measures are continued, it is possible that people in the company can recognize a sense of incongruity or risks from various phenomena. If these customs and techniques are shared by the company (socialization), it leads to conceptualizing new risk (externalization) and updating the behaviour standards (combination). Such a company can respond to many risks, since people recognize and try to cope with risks before they become reality.

### **5. CONCLUSIONS**

In this paper we have indicated that studies on risk management and knowledge creation rarely pay direct attention to risk knowledge creation. We have examined what risk knowledge is, how we can understand risk knowledge creation using case studies and the theory of Nonaka and Takeuchi (1995), and what to focus on to make these practices effective. As for socialization, we have indicated that if socialization of risk knowledge creation is over stressed, the possibility of risk occurrence, in the form of accidents or mistakes, might increase. As for externalization, we have studied the necessity of expressing risk, which could be serious, in the company's own context. As for combination, it is difficult to understand risk and the results of preventative measures in the short-term or directly. So we have pointed out the importance of justifying preventative measures by positioning them as a company-wide issue. As for internalization, we have shown that it is necessary to stimulate interest in the subject through education or learning and to have methods to maintain gained tacit knowledge. In short, we have suggested that learning and experiences should be on a small scale and high frequency incorporated into daily operations, not as special activities.

Now, we will present some implications and contributions, which could be of importance to the leadership. When a company finds unrecognized risk, it is essential that someone points it out, discussions are held and measures created, yet passive leaders might possibly suppress these actions. If this attitude is normalized, then recognized serious risks could be ignored without being addressed as an issue. So it is necessary for leaders of organizations to actively point out possible risk in order to facilitate risk knowledge creation and to be open to discussion about risk with subordinates. A leader's most important role is to foster a culture in which risk is discussed.

Moreover, it is important to document risk and assumed crisis for practical applications of risk knowledge creation. Companies may be negative about enforcing it, since it requires costs and highlights threats and weak points of the company. However, starting documentation of risks or crises is optimal for practical applications of risk knowledge creation. As in order to document risk and crises, various people in the company must argue, conceptualize and categorize them. The series of these processes includes socialization, externalization and combination which are critical for risk knowledge creation.

Lastly, we will suggest a future research topic. In chapter 4, we analyzed each of the four processes by illustrating specific cases. From these analyses, we have clarified some crucial issues in each process. However we have not analyzed the connection sequence of the four processes. Henceforth, we could say that an analysis describing the four processes in detail would be necessary to understand the dynamic aspect of risk knowledge creation.

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*Adam Kagan*

#### 4.4 THE VALUE OF OWNERSHIP AND ITS INCREASE AS A FUNCTION OF AGRICULTURAL ENTERPRISES

**Summary:** The paper deals with the issue of agricultural enterprises, i.e. farms operating on a large scale, and the goals that their owners pursue. The research carried out in 2009/2010 was intended to answer the question of whether the theory of increasing the value of ownership – as a paradigm for action effectiveness – also applies when the functions of owner and manager in agriculture are combined. A research hypothesis was made that this is the key criterion for establishing and managing such entities that the owners consciously identify. Based on the research results it was determined that, when making their choices, owners of agricultural enterprises pursue a cluster (group) of goals. Self-reliance as a result of being self-employed and managing the enterprises was named as the most important reason for carrying out that type of activity. As business (economic) goals were also high on the priority list, the research hypothesis could not be falsification. This can be explained by the fact that, albeit being not the only incentive for agricultural entrepreneurs, increasing the value of ownership is an important criterion for evaluating the effects of running the business. Therefore, when researched from an economic point of view, the assessment of whether (and to what extent) the goal is met should be considered sub-optimization, i.e. in terms of the fulfilment of the boundary condition, as opposed to maximisation.

**Keywords:** value of ownership, goals, agricultural enterprises, Poland

### 1. INTRODUCTION AND STUDY HYPOTHESIS

The owners of agricultural enterprises, which are large-scale production holdings, should have a business approach to their activities. Assuming that, as a paradigm of operational effectiveness, the theory of increasing the value of ownership is also applicable in relation to agricultural large farms, this factor determines the allocation of resources, and has an impact on the organisational structure of enterprises, while the operations of the owners should be subordinated to the implementation of this strategic task (Rappaport 1986, Libbin et al. 2004).

The aim of the conducted research was to empirically examine if this is the actual, as well as the realised (emphasised by the owners), criterion deciding on the establishment and management orientation of agricultural enterprises?

Thus, the hypothesis was made that if agricultural enterprise owners should deem it significant that their farms is a good place to invest their own funds or allows them to extend the property, also for their descendants, it would mean that one could not dismiss the hypothesis that their conscious goals function is to increasing the value of ownership.

### 2. THE GOALS AND MOTIVES OF AGRICULTURAL ACTIVITIES

In the economic analyses of agricultural holdings, it is commonly assumed that farmers are oriented towards maximum or satisfactory financial results, seen either as income (in case of own unpaid work), or profit (with the recognition of labour fees). These measures constitute a certain standard for the evaluation of the prosperity of agricultural producers by virtue of holding and managing agricultural farms, and with recognition of equity cost, also taking into account the economic effectiveness of their activities (Weisbrod and Hansen 1968).

However, according to behavioural theory, the reasons for decisions have a multidimensional structure, while the motive of income/profit as the financial goal is one of the

most significant, but not the only, criterion in initiating and running activities (Gasson 1973). In their choices, farmers, including the owners of agricultural enterprises, are driven by an entire bundle (group) of goals formed under the influence of individual properties of themselves and their family members, and their adhered-to systems of values (ethical, social). Diverse impacts on the goal are made by needs conditioned by age, education, family-life stage, community, etc. (Willock et al. 1999, Van der Ploeg 2000, Burton 2006, Sorenson 2011).

Owners make important decisions on the selection of an agricultural holding as the only or additional place of work, as well as the source of supporting the family, expanding or limiting the production property, level and orientation of the children's education and selection of their own professional career, amount of personal free time, expected living conditions in the household (level of expected consumption), the field of using natural environment resources, and assumed adaptations to climate changes. Ultimately, this translates into decisions on the mode of producing and applying diverse strategies of conducting agricultural activities and expected profits from the management and ownership of an agricultural holding (Bennett 1980, Walter 1997, Vandermersch and Mathijs 2002, Brodt et al. 2006, Farmar-Bowers 2010).

Therefore, success or failure alone as the subjective assessment of obtained benefits from being the owner of an agricultural holding may be considered through the prism of realising the personal targets and preferences of the entrepreneur. The perception of certain positive states of mind, defined as happiness, satisfaction, and a sense of prosperity, may depend on the possession and management effectiveness of the agricultural holding (enterprise). However, these relationships may be reversed - the feeling of satisfaction from their personal life may impact on the perception of the results of agricultural activities (Harper and Eastman 1980, Mäkinen et al. 2009).

Due to this, the drive towards economic (business) goals such as maximisation of the financial gain/profit, and growth of the holding's value, and the technical effectiveness of using the production factors, may have suboptimal effects in reality. Meanwhile, agricultural producers can provide the research with goals other than just material benefits resulting from owning an agricultural holding.

Based on the results of surveys of American farmers, it is possible to form a thesis that there is always a group of farmers who consider self-employment and lack of labour subordination as more important principles than income/profit maximisation (Kliebenstein et al. 1980). The ownership of an agricultural farm provides the owner with the ability to act as the supervisor, and certain subjective benefits, resulting from personal work organisation, lack of supervision and control, responsibility for performing the orders of others, or even administering others.

Personality traits can render professional subordination difficult to accept for some farmers but farms as their owner's workplaces eliminate such inconveniences. In holdings employing more than one person it also entails performing the managerial function, inseparably linked with issuing orders to the hired employees or family members. Benefits derived from exercising such authority may influence the decrease in the acceptable level of financial results produced by the management or the expected profits from the change in the value of the owned farm.

Research run in Australia says that not only independence, but also the role of the social prestige of the performed work, drive for the extension of the holding, and preservation of the family tradition of being a farmer, all are perceived as secondary (less relevant) drivers by people of that country. On the other hand, Australian farmers who sustained themselves only by means of agricultural production stressed the importance of other goals. The most significant role in carrying out agricultural activity was ascribed by them to the satisfaction derived from the mere fact of owning a property in the form of an agricultural holding. It was followed by obtaining an acceptable level of current yield and ensuring the future profitability of the holdings run under their management. In their opinion, an important driver for action is the satisfaction found in the usefulness of the performed work, or, in other words, the

subjective perception valuing one's own efforts put into the holding. Therefore, in the pyramid of goals pursued by Australian farmers' economic reasons, i.e. business purposes, took precedence over independence (Robinson et al. 2003).

The decisions made by farmers are influenced by the level of uncertainty concerning the ultimately-achieved results of their activities. The limitation of risk through the stabilisation of production conditions may thus be considered as a desired state and one of the assumed goals of their activities, particularly in the conditions of an unstable community caused by the weakness of the agricultural market institutions and the exercise of the rights of its members, as well as the high costs of obtaining capital from beyond the holding (Gomez-Limon et al. 2003).

Studies carried out in Poland show that in the 1980's the primary goal of farmers was to reduce risk perceived in managing an agricultural farm that is free of any debt in the form of bank loans. Streamlining the holding, understood as the betterment of its productive capacity, as well as aspects related to raising children, faded well into the background (Majewski and Ziętaara 1997).

Political and economic transformations had a substantial impact on the formation of the rationale behind farmers' behaviour. Research conducted in 1995/1996 reported the upbringing of children and securing their future as the objective most often indicated. Lower in the hierarchy were the constraint of market risk interpreted as the certainty in respect of selling produced goods at an acceptable price and obtaining a payment in return; and the financial safety stemming, i.a., from the lack of credit liabilities (Majewski and Ziętaara 1997). In those times, safety-related issues placed themselves higher in the hierarchy of goals than the maximisation of the agricultural holding's income.

Systemic transformations were accompanied by a difficult internal situation as regards the economy, which forced an adjustment in the rationale behind the activity to make allowances for the problems farmers had to face at the time. Altruistic sacrifice for children declared as the goal of conducting agricultural activity resulted from the negative assessment of the possibility of being successful in the performance of business tasks in the then reality, while at the same time it was an expression of an anticipated improvement in the overall economic situation in the future. Hence, it was approached as some kind of cost imposed by the changes in the political system, whose effects, although postponed in time, will be enjoyed by the successors, not necessarily employed in farming.

The goal, understood as the minimisation of risk in stable institutional and market conditions, may also be of a common nature. There is a conviction that agricultural producers avoid operations, which could lead to significant differences between the achieved and expected economic results. This is confirmed by the studies of the financial security of agricultural holding activities, understood as the ability of current regulations of obligations (usually expressed in liquidity indicators), or the assessment of possibilities of obtaining and returning foreign capital (solvency). This aspect of their activities is considered as a necessary area in agricultural holding economic analyses (Gloy et al. 2005).

Individual owners may exhibit different aptitudes for undertaking actions aimed at delivering investments, introducing innovative solutions, taking risks in respect of product supply and sales, or setting the direction of production activities. While the degree of specialisation or diversification in the holding's activity may be estimated, the task of separating the individual's inclination to risk-taking from among other factors influencing farmers' decision-making process is a tremendously difficult one (Pope et al. 2011).

There is a difficulty in defining the actual goals of agricultural holding owners on the basis of their decisions, which may result from the potential situation of the lack of concurrence between the orientation of their realised operations and the actual preferences of the producers. The research into English holdings shows that despite the realisation of operations associated with the protection of the natural environment and the multifunctional development of rural areas and agriculture, holding managers saw themselves primarily as food producers.

They treated actions associated with environment protection or other leading to the limitation of the intensiveness of the held production factors as a necessity rather than a conscious need for realising specific goals. This resulted from the production regulations imposed upon them by current agricultural policy. The farmers themselves declared goals aimed towards effectiveness, i.e. an improvement in the productiveness of the production factors and their profitability, as well as the preservation of the agricultural holding in a good economic condition for the successor (Burton and Wilson 2006).

Thus, the agricultural community may lead to an overestimation of the hierarchy of goals, and also impose specific actions on the producers (Gagnè et al. 2011).

The discrepancies between the goals indicated by farmers under various studies may also come down to the heterogeneity of the analysed communities. Differences in the analysed samples, such as the volume of agricultural production, the proportion of revenue from agriculture in determining personal income, and, indirectly, also the role of the farm as a workplace, are all the product of the separate nature of the preferred goals; hence they affect the measurements taken.

Studies covering farmers from Ohio, USA, confirm such correspondence, although not in a direct manner. In a total of 302 farm-owners with a very high diversification of production scale, the respondents reported long-term profit generation as the primary objective of having an agricultural holding. Further in line was the increase in production efficiency and the preference for living in the countryside. Such values as the maximisation of free time and the preservation of the holding for one's successors were much lower on the list of farmers' priorities (Stark et al. 2002). These studies allowed us to establish a positive and statistically-relevant correlation between business-related goals (profit maximisation, holding-yield improvement) and the produced financial results. Taking into account the considerable impact of the agricultural production scale on the profitability of activity in this sample, it is possible to draw direct conclusions with regard to the influence the farm owners' aims have on the size of their holdings.

The correspondence between the generated financial yield and the declaration on the preferred lifestyle connected with dealing in agricultural production and living in the countryside by the owners, was, on the other hand, absent. On these grounds it can be then assumed that such an objective is characteristic of the smaller-size farms covered in the survey, owned by people with better qualifications, whose income comes from non-agricultural activity as well.

The existence of a relationship between the obtained results and the policy of producers to achieve particular goals is confirmed by a study carried out in 2001 on a group of 257 Dutch milk producers. The survey observed a variation in the goal structure of farmers depending on their different yield capacities. It was proven that along with a rise in the milk yield, conditional on the respective production quotas, farmers preference grew in respect of economic and commercial aims. Since the milk quota (production level) was closely related to the income level, financially efficient holdings exhibited congruence between the preferred and achieved economic goals (Bergevoet et al. 2004). Some interesting results were secured in 2007 in Finland when investigating a group, representative of the whole population of family farms of that country, for the attitude of farm owners towards their status as a failure or success in running a farm. In the surveyed period the agricultural holdings recorded negative financial results, and farmers' income was significantly lower than remunerations obtained in other sectors of the economy. Under deteriorating economic conditions for agriculture it was also established that there exists a positive cause-and-effect relationship between the preference for economic and commercial goals of farm-owners and farms' profitability (financial results). The strength of this relationship was, however, poor, which can indicate that the mere fact of the failure to achieve a particular goal may represent an element impacting its exposure by the producers (Mäkinen et al. 2009).

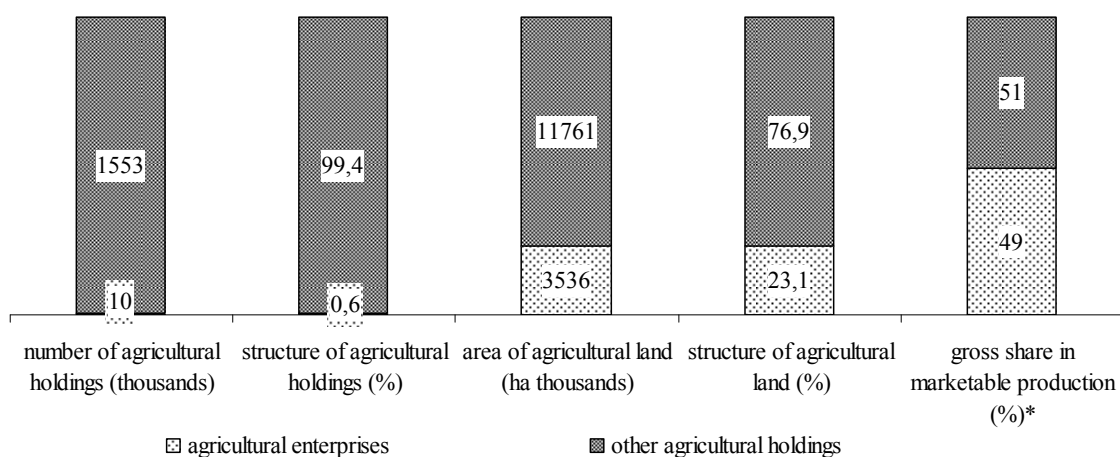


The above conclusion does not stipulate that farmers earning low income do not follow economic calculations in making strategic decisions regarding the direction of the development and operation of their agricultural holding. However, it can be assumed that research based on a subjective assessment of producers themselves is burdened with the impact of the economic standing of the holdings under their ownership. Unfortunately, there are no feasible methods for eliminating such influences, due to variability in the conditions for production, as well as differences in the owners' attitudes towards the status referred to as failure or success. When voicing their opinion, farmers can look for justification for the failure to achieve business goals by putting forward the alleged superiority of other factors which incline them towards engaging in agricultural activity.

### 3. EXAMINED POPULATION

In the performed research, the field of observation included the population of farms running agricultural activities on a minimum area of agricultural land of 100 ha, allowing the unambiguous classification of such units as agricultural enterprises. The selected group defined as agricultural enterprises is very small in comparison to all agricultural holdings in Poland (only 0.6%), but covers the ownership or lease of approximately 23% of the land used for agricultural purposes and, as estimated, provides almost 50% of marketable agricultural production (Figure 1).

*Figure 1: Agricultural enterprises compared to other agricultural holdings in 2010*



\* author's estimates

Source: Report on the results. National Agricultural Census 2010.

Such a group emerged as a result of ownership transformations in Polish agriculture that began to take place in 1992. The liquidation of the former state-owned agricultural enterprises and the privatisation of their property gave rise to all businesses operating as companies, and to some part of farms owned by natural persons. The volume of large-area farms (agricultural enterprises) is complemented by entities operating as agricultural holdings in socialist times (before 1989), for whom the privatisation of state-owned property was an opportunity to take them over and expand their productive potential, leading to fundamental changes in their organisation. Thus, from the point of view of the market-operation period, the community of agricultural enterprises comprises relatively "new" entities, hence units which are currently at the growth stage, or those who have just passed that stage to find themselves at the pre-mature stage.

However, the subject of this research was not the entire population of agricultural enterprises, but only that part of the general population with the manager combining the function of the owner (the only or major holder of the rights to the equity of the enterprise) with employment, i.e. the management function. Thus, the farms with owners who treated the agricultural holding as only a

capital investment and were not employed within have been omitted. The research also omits the entrepreneurs who managed the holding, but also held minority shares, since it was decided that in both cases the assumption of the dominating role of increasing the value of ownership as a strategic business goal is not contested. Therefore, the target area of the examined population covered the enterprises with unknown numbers and parameters, simultaneously fulfilling the aforementioned criteria on ownership and management.

However, the analysis of the goals of the conducted agricultural activities was performed on a selected group of agricultural holdings falling under the sample used to monitor the entire population of non-associated agricultural enterprises in Poland (Kagan 2007). The final research was performed with the application of data for 63 units with diverse production and organisation features and achieving diverse financial results (Table 1).

**Table 1: The production and economy profile of the examined sample according to data from 2009**

Selected features	Statistical measures				
	mean	median	maximum	minimum	standard deviat.
Agricultural land area (ha)	447	328	1963	102	396
Proportion of owned land (%)	55,9	64,7	100	0	40,7
Share of arable land (%)	81,9	96,8	100,0	0,0	28,5
Economic size (ESU)	190,8	125,9	948,4	18,8	188,0
Age of manager (years)	51,1	53,0	72,0	27,0	9,6
Number of years worked in farm	16,8	15,0	39,0	1,0	11,1
Number of employees	11,9	7,2	77,0	1,0	13,1
including non-labourers (%)	15,6	13,5	46,3	0,0	14,8
Technical devices for labour <sup>a</sup> (€ thousands)	118,8	86,1	467,7	12,4	89,5
Labour productivity <sup>b</sup> (€ thousands)	86,0	60,0	484,7	13,7	78,7
Return on assets <sup>c</sup> (%)	9,1	7,5	44,1	-7,4	10,2
Return on invested capital <sup>d</sup> (%)	5,8	4,4	29,4	-5,7	6,2
Return on equity <sup>e</sup> (%)	15,3	10,3	154,7	-29,1	23,1

<sup>a</sup> Relation of total capital per full-time employee, i.e. the sum of the balance and leased capital (without land value),

<sup>b</sup> The value of total income per one full-time employee,

<sup>c</sup> (ROA) – the relation of the net financial gain (profit) to the value of the balance assets,

<sup>d</sup> (ROIC) – the relation of the net financial gain (profit) to the value of the property constituting the sum of balance assets and value of leased property,

<sup>e</sup> (ROE) – the relation of the net financial gain (profit) to the average state of equity.

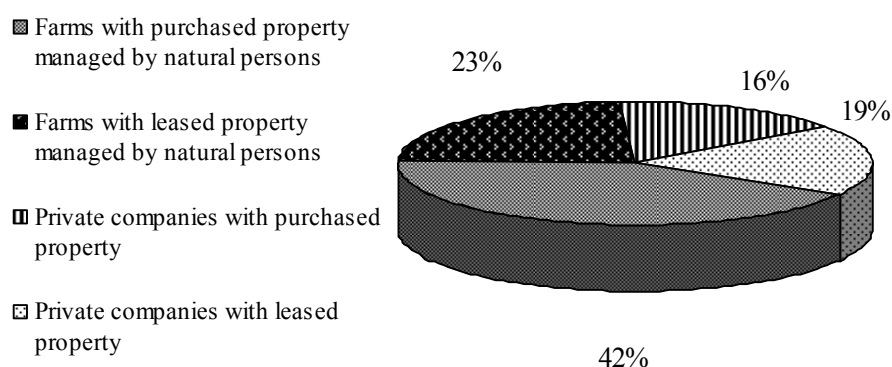
Source: own study

The highest level of change in the sample, besides the features describing the production potential (agricultural land area, economic size), was recorded through the analysis of employment of agricultural holdings. The examined enterprises also applied diverse production technologies (relation of labour, capital and land), which, combined with the management system, brought diverse economic results.

Besides the high diversity of the production potential and, to a lesser extent, qualities describing the managers of the units, the examined enterprises also varied in the specialisations of the agricultural production. Almost 60% conducted exclusively or mainly crop production. The holdings specialising in livestock production with concentrated feed (pigs and poultry) comprised 30%, while those of livestock fed with roughage comprised only 11%.

The surveyed population abounded in businesses in the form of natural-person-owned agricultural holdings, which in turn were dominated by entities whose property was entirely or to a great extent purchased by entrepreneurs (Figure 2).

**Figure 2: The legal form of agricultural enterprises and the ownership status of the utilised production facility**



Source: own study

In general, these included the smallest agricultural enterprises. The adopted financial result category in such holdings was a positive balance despite the lack of formal remuneration for own work. The owners themselves set the level of remuneration for own work conditional on work expenditure, education, opportunities for alternative post placement outside the farm, and the potential level of remuneration for work in other entities. The lack of homogeneity in the analysed sample in respect of the above-mentioned characteristics is not a surprise, as it is a natural consequence of the heterogeneous input population taken the study.

#### 4. RESEARCH METHODS

The verification of the presented hypothesis was made on the basis of the answers to the questions included in the questionnaire provided by the agricultural enterprise owners. They were asked to relate to five statements concerning the main factors deciding upon their activities in the form (scale) of an agricultural enterprise (Table 2).

**Table 2: The factors deciding on the running of an agricultural enterprise and objectives of owners**

<i>Name</i>	<b>Questionnaire statement</b>	<b>Deciding factors</b>	<b>Main objectives of the owner</b>
<i>Place of residence</i>	Due to the place of residence (location of the household), my environment (family, friends, etc.)	Influence of the environment expressed by the impact of the social, natural environment – preferred place of life	Residence and work in a preferred location
<i>Work</i>	The labour market is variable, while an agricultural holding ensures labour security under all conditions	Owner personality – tendency to take risks, obtained skills, education,	Risk limitation
<i>Independence</i>	Being the owner of a holding makes me independent, no one gives me orders	Owner personality – need for independence, preferences concerning my way of life and work	Maintaining a specific lifestyle and way of gaining income
<i>Profitability</i>	The agricultural holding is a good place to invest my own capital	Economic reason with emphasis on the role of obtaining current benefits	Business goals (increasing the value of ownership)
<i>Property advantages</i>	The agricultural holding allows me to multiply the property value, including that for my descendants, and also ensures necessary means for everyday support	Economic reason with recognition of the possibility of putting off achieving profit in time (e.g. change in property value)	

Source: own study

The entrepreneurs assessed the level of the impact of a given factor by its valuation expressed in five categories: most important, important, “neither important nor unimportant”, of low importance, unimportant. Then, with the application of the Likert scale (a five-stage ordinal scale), the answers were encoded numerically by the growing ordination of the values (most significant reason – digit 1, significant – digit 2,..., insignificant – digit 5).

In turn, the answers to the above statements served to form conclusions on the type of causative factor deciding on the running of this form of activity by the owners and the identification of the hierarchy of their goals. The conclusion was indirectly aimed at eliminating the disturbance resulting from the perception of the examined persons, and the diverse understanding of certain concepts.

The assessment of the statistical relevance of the impact of individual driving forces on the undertaking of agricultural activity by farm owners was based on the application of Friedman’s non-parametric ANOVA test.

The relation strength measurement applied Kendall’s tau statistic, i.e. a non-parametrical test serving the determination of the compliance of the distribution of two properties. Kendall’s tau factor constitutes the difference between the probability that the compared variables will be arrayed in the same order and the probability of their arrangement in different directions. Therefore, the level of compliant and incompatible ordinance decides upon the correlation strength among the examined properties.

## 5. RESULTS

The research results show that the analysed group understands “independence” as the lack of official subordination at work, and it was the highest classified reason for running an agricultural enterprise (Table 3). Most owners indicated this goal as the most important (36.5%), and the least research participants as unimportant (7.9%). The average of the ranks appointed for this formula was the lowest in the survey (the lower the value, the higher the significance of the factor). This is undoubtedly related to the nature of the entrepreneurs’ personalities and their tendencies or aspirations to lead other people. Considering the relatively short period of the market activeness of the examined farmers, their owners are characterised by a high level of entrepreneurship. One of its results is the drive to self-employment.

*Table 3: The results of indications concerning the reasons for running agricultural activities<sup>16</sup>*

Statement	Rank (% of indications)					Statistical measures	
	1	2	3	4	5	Mean	stand. deviat.
Independence	36,5	25,4	15,9	14,3	7,9	2,32	1,23
Property advantages	20,6	39,7	23,8	6,3	9,5	2,44	1,22
Profitability	20,6	33,3	23,8	12,7	9,5	2,57	1,32
Place of residence	17,5	27,0	30,2	14,3	11,1	2,75	1,23
Work	7,9	28,6	28,6	17,5	17,5	3,08	1,17

\*measures defined for the ranks of a given factor

Source: own study

The next two places were occupied by economic reasons, but from the viewpoint of the respondents, it was more important to achieve property advantages. The land rent in terms of

<sup>16</sup> The results of the conducted ANOVA Friedman test, i.e. chi square (N = 63, df 4) = 16.95273, indicate the need to dismiss the zero hypothesis at the level of statistical significance  $\alpha=0.00197$ . Thus, the diverse impact of the factors (diverse objective preference) on the selection and progress of the activities in the form of agricultural enterprises should be assumed. The Kendall level of compliance near 0 (in the study = 0.06727) confirms the diversity of the rank distribution for individual reasons.

price is an important benefit to the people who have obtained ownership of land, particularly since EU integration, which provided a significant rise in the prices of this production factor.

However, with the increase in the proportion of lease, i.e. the use of property not owned by the enterprise, benefits from the changes in its appraisal are reduced. Thus, the differences between the factors defined as “property advantages” and “profitability” were caused mainly by the diverse share in the sample of people managing enterprises with purchased and leased property.

The influence of the community, including society (the family), identified as “place of residence”, found itself in second-last place. The examined entrepreneurs gave the lowest place in the hierarchy to “work”, i.e. the sense of security resulting from a guaranteed workplace. The low significance of this need results from the good preparation of the examined group for the performed profession of an agricultural enterprise manager, since it requires not only extensive knowledge of management and marketing, but also the field of agricultural production. The most frequently parameterised properties allowing such preparation include the level of education and labour tenure in the unit. Two-thirds of the respondents held higher education, while others held at least secondary education. The average period of employment in an examined enterprise was almost 18 years. Because there is a current demand for experienced agricultural enterprise managers, most entrepreneurs would have no problem with employment in other farms, which was expressed in the research.

However, there is a group appreciating the benefits of self-employment, not only in the context of leadership and independence, but also in the hazards resulting from the variability of the labour market. This share can be determined by comparing the number of indications of people considering both factors as parallel, as most important and important (12.7%). This group comprises only a fragment of the answer distribution, while the assessment of dependency requires the recognition of the entire group of both properties.

On the basis of the performed Kendal’s test, it was established that there is a mutual dependency among the ranks of the individual factors, and indirectly among the goals of the agricultural enterprise owners (Table 4).

The highest similarity in rank distribution was observed between “independence” and “work”. For both factors, the level of preference was the most similar, while the correlation strength was average. The correlation between the reasons of running an enterprise due to the residence (“place of residence”) and “work”, as well as “place of residence” and “independence” was also statistically significant. In these two cases, the orientation of dependencies was also similar, but the correlation strength was weak.

**Table 4: The level and orientation of dependencies among reasons for running agricultural activities**

Statement	Place of residence	Work	Independence	Profitability	Property advantages
Place of residence	1,000				
Work	<b>0,175 p=0,042</b>	1,000			
Independence	<b>0,176 p=0,041</b>	<b>0,404 p=0,000</b>	1,000		
Profitability	<b>-0,163 p=0,054</b>	0,080 p=0,353	0,0750 p=0,383	1,000	
Property advantages	0,023 p= 0,792	0,041 p=0,635	0,009 p= 0,918	<b>0,285 p=0,001</b>	1,000

Data in the case of the probability of first-type error lower than assumed and below 5% ( $p < 0.05$ ) in black.

Source: own study

The opposite side saw economic objectives, which also had statistically significant and positive dependency. The strength of this correlation was moderate, which was a natural consequence of the aforementioned diversity of the examined sample concerning property

ownership. In contrast to leaseholders, owners obtained additional economic benefits resulting from the change in the market value of the previously purchased land.

The lack of correlation between the economic and other goals should be noted. There were even observations of an opposite distribution of the assessments of the impact of the “place of residence” and “profitability” as reasons for running agricultural activities, and indirectly owner goals. Although statistically insignificant, the negative correlation probably results from the fact that when taking over or organising an agricultural enterprise, the leaseholders often changed their place of residence, i.e. left their native area and community. Thus, migrations of people associated with searching for the optimal means of income were observed.

The conclusion formulated above is confirmed by the strength and direction of interdependencies between the particular characteristics of agricultural enterprises and the motivations behind their owners’ decisions (Table 5).

**Table : The degree of correspondence between the particular characteristics of agricultural enterprises and owners’ motives**

<b>Selected characteristics</b>	<b>Place of residence</b>	<b>Work</b>	<b>Independence</b>	<b>Profitability</b>	<b>Property advantages</b>
Proportion of owned land (%)	0,236 <sup>***</sup>	0,041	-0,074	-0,170 <sup>**</sup>	-0,097
Manager’s age (years)	-0,081	-0,053	0,011	-0,082	-0,170 <sup>**</sup>
Years worked at the farm	-0,096	0,051	0,145 <sup>**</sup>	-0,060	-0,250 <sup>***</sup>
Proportion of people employed in non-worker positions	0,032	0,117	0,048	0,235 <sup>***</sup>	0,155 <sup>**</sup>
Technical devices for labour	0,205 <sup>***</sup>	0,196 <sup>**</sup>	-0,014	-0,144 <sup>**</sup>	-0,024
Return on assets (ROA)	0,137 <sup>**</sup>	-0,043	-0,112	0,005	0,209 <sup>**</sup>
Return on property (ROIC)	-0,044	-0,063	-0,198 <sup>**</sup>	0,052	0,142 <sup>*</sup>
Return on equity (ROE)	0,092	-0,001	-0,093	0,119 <sup>*</sup>	0,163 <sup>**</sup>

In cases where the relevance level was  $p < 0.1$  but simultaneously was lower than 0.05, it was marked as higher than 0.01<sup>\*\*</sup>,

<sup>a</sup> Presented is Tau Kendall’s statistics. In the event of the lack of a statistically-relevant correspondence with the owners’ rationale for conducting agricultural activity, farms’ characteristics were omitted.

Source: own study

A statistically relevant correlation between the proportion of owned land in the agricultural enterprise, and “place of residence”, plus a negative correspondence of this feature to the rationale described as “profitability”, confirm the influence of the form of property management on business goals. Purchasing the land is a strategic decision from the economic point of view since it binds the purchaser to this sector and this way of earning a living. It is even more so for entities with a smaller scope of activity (farms managed by natural persons), which operate within restricted investment options. It is also important because of the choice of living and working environment, as it results in a firmer link between the owner and a given place.

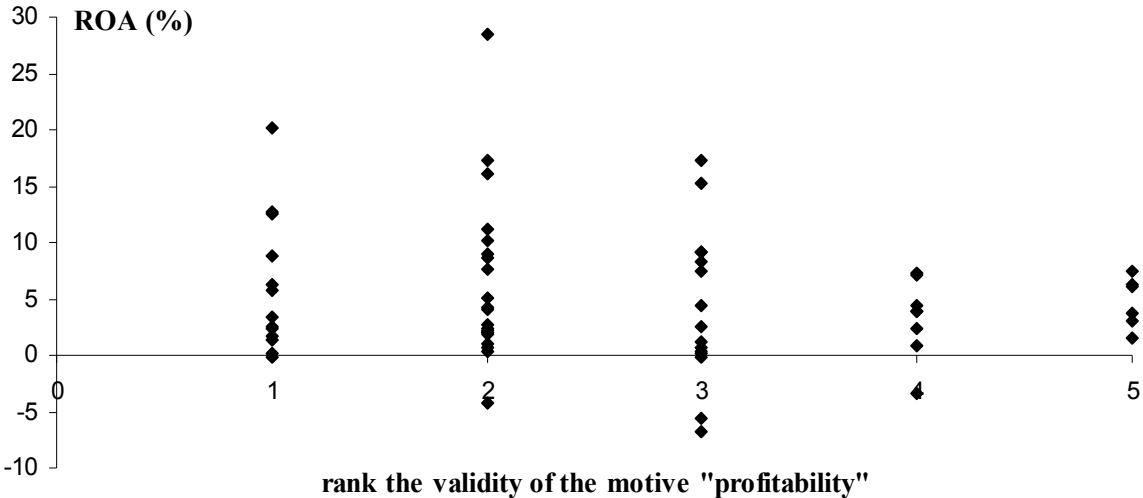
“Independence”, being the objective of farm-owners expressed as pursuing a particular lifestyle and breadwinning, was positively connected with the number of years worked in a given holding. Therefore, this factor is valued i.a. by the former employees of state-owned farms who took advantage of the privatisation process to engage in independent business activity. It is a rationale connected with the owners’ personal traits and their life experience.

Among the motives of a business-economic nature, only “property advantages” exhibited a positive correlation with all financial efficiency indicators, although the correlation was weak. A negative correspondence was found between this factor and the owners’ age and their job seniority in the enterprise. Younger farm-owners tend to be oriented towards long-term goals. With the prospect of longer work at a farm, they were more often willing to postpone the economic profits in time. On the other hand, no statistically relevant link between the “profitability” factor and the remaining financial indicators could have been established,

except for ROE. The rationale behind such a situation is that “profitability”, as an important motivation for conducting business activity, is an insufficient driver for obtaining more favourable financial results. Factors other than the conscious pursuit of “profitability” impact on unit efficiency, and the crucial elements include business environment, access to scarce resources (e.g. good-quality agricultural land), and owners’ orientation towards long-term goals.

During the period of the study, i.e. in 2009, there existed favourable external conditions for agricultural activity, stabilised i.a. with the financial support for farms under the Common Agricultural Policy. The financial results of businesses were substantially impacted on by the ability to obtain various subsidies and extra payments, as a certain stream of income. Agricultural enterprises, as a whole, achieved positive financial results, and only five holdings (7.9% of the community) recorded a loss, which is reflected in their negative ROA (Figure 3).

**Figure 3: The value of ROA conflicted with the preference for “profitability” as a justification for conducting activity in the form of agricultural enterprise**



Source: own study

The obtained results provided a conclusion that not only the proportion of owned land but also the legal form of farm organisation remains in a statistically relevant correlation with the motive for conducting activity described as “place of residence” (Table 6).

**Table 6: The degree of correlation between the legal and ownership status of an agricultural holding and its owner’s motives**

Ownership and legal status	Residence	Work	Independence	Profitability	Financial gains
Farms with purchased property managed by natural persons	0.242***	0.044	0.116	0.045	0.187**
Farms with leased property managed by natural persons	-0.253***	-0.009	-0.108	0.206**	-0.004
Private companies with purchased property	0.058	-0.083	-0.078	0.052	0.171*
Private companies with leased property	-0.091	0.032	0.041	0.324***	-0.155*

Source and marking as in Table 5.

The survey results indicate that for the owners of companies, with both leased and purchased property, the place of residence does not play an important role, and more importance in respect of the decision to undertake business activity was attached to business considerations. The

companies with leased property, being the largest entities, valued more the perception of the agricultural enterprise as a good option for capital investment, with the impact of this rationale being greater compared with the group of natural persons managing leased property.

## 6. CONCLUSIONS

The studied economic motives, examined as both current benefits (“profitability”) and those put off over time (“property advantages”) were high in the hierarchy of significance of the reasons for running agricultural activities by the owners of agricultural enterprises. Their actions were consciously driven by economic effectiveness, but with the recognition of other benefits resulting from the fact of being a large farm owner. The sense of independence resulting from self-employment and enterprise management and the possibility of residing and working in a specific environment are the most important declared benefits to the owners of agricultural enterprises.

The conducted study did not conclude that the research hypothesis was false. Thus, the assumption that the increasing the value of ownership is a conscious function of the enterprise goal falls under the category of possible solutions. It is a significant criterion of the evaluation of activities’ results, although it is not the only target of the entrepreneurs, and a motive for running large agricultural holdings. Thus, the multiplication of ownership value should not be examined as maximisation, but in suboptimal categories, i.e. the search for certain desired levels. The owners are ready to give up some economic benefits in favour of other benefits of an emotional or social nature. Due to this, the economic research evaluation of the implementation of the goal defined as increase the value of ownership should rather be examined as the fulfilment of a certain marginal condition, not the search for a system to ensure the highest-possible financial gain and property advantages growth.

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*Andreas Heck, Zoltán Szegedi, Marcus Störkel*

#### **4.5 ROLE OF REGIONAL CLUSTER DEVELOPMENT CASE STUDY: SUPPORTING VIRTUAL ENTERPRISES (VE)**

**Summary:** Clusters in general are a particularly important way through which location-based complementarities are realized.

This paper shows one example of regional cluster composition in the economic performance of industries, clusters and regions in the field of the Telecommunication sector in Germany. It examines the role of regional clusters in regional entrepreneurship. We focus on the distinct influences of convergence and agglomeration on growth in the number of start-up firms as well as in employment in these new firms in a given region of a special industrial sector.

The first step in the lifecycle of a virtual enterprise is the identification of potential companies or company departments which have a common business goal. In order to approach the seed identification problem of virtual companies, three basic sub-problems have to be solved. Firstly, relevant company data and information have to be acquired. Secondly, the information has to be analysed in order to find common aspects and business goals. Thirdly, selection criteria have to be defined in order to decide whether a company might be part of the virtual enterprise or not.

The paper at hand presents an approach to semi-automate the seed identification of the Mobile Communication Cluster. Its use inside a company gives rise to the discovery of new business opportunities through automated business segment analysis.

**Keywords:** regional cluster, telecommunication, virtual enterprises

### **1. INTRODUCTION**

This paper shows the Mobile Communication Cluster (MCC) cluster and the Deutsche Telekom technology programs which receive funding by the federal government and the foundation of Deutsche Telekom AG.

MCC aimed at the advancement of the business competition of a weakly developed region through the generation of a virtual enterprise. MCC was initiated by the „wir4Region“ Business Development Network for the cities of Moers, Kamp Lintfort, Neukirchen Vluyn und Rheinberg. It was supported by the European Commission, the Ministry of Commerce and Work North Rhine-Westphalia (NRW), the Initiative for Innovative Communication NRW and the Deutsche Telekom AG. Hence, the MCC is a perfect example of a cluster in the sense of (Porter, 1998) and it fits the requested innovation capabilities defined in (Roettmer and Katzy, 2006). The objective of MCC was to actively support the process of cluster creation by

- a) identifying adequate companies by profile screening
- b) a goal directed merger of cluster companies in order to define a new competence profile
- c) representing the new competence focal point to the conjoint market
- d) developing a virtual umbrella organization
- e) setting up a real organization responsible for
  - i) the acquisition of high potential customers
  - ii) the definition of common rules within the cluster and
  - iii) the appointment of competent managers.

Expectation of Cluster projects in general:

Most of cluster projects show positive results in respect to the economic output of these programs. Several critical factors could limit the quantitative evaluation of the impacts of these programs. These are due to the emergent character of the targeted developments, the complex impact patterns and the considerable time-lags of state financing.

Proposed advantages: Companies participating in a strong cluster register higher employment growth and patenting due to forming to virtual enterprises and strong co operations. Industry and cluster level growth also increases with the strength of related clusters in the region.

Public financing of cluster activities, research institutions and other organizations is based on the observation that networking plays an increasing role in technological progress. Due to this fact the installation of a solid working base due to the cooperation with Deutsche Telekom AG (the largest telecommunications provider in Germany) is important.

## 2. LITERATURE REVIEW

The first step of the MCCs objective, namely “identifying adequate companies by profile screening” makes highest demands on the project. Actually (Kanet, Faisst, and Mertins, 1999) define a key function to this objective as follows:

“During the formation phase, a key activity is to identify suitable partners as specified by the partnership architecture. Finding potential partners can be facilitated either through an internal partner database of the broker, or through internet search of enterprise presentations. An internal partner database, i.e., a network of entities (potential partners) including an inventory of partner capabilities and capacities, could be constructed. Upon definition of a particular mission, the network could be searched for specific recommendations for possible partners. An internet search of enterprise presentations could be facilitated by so-called „intelligent software agents“ for organizing and systematically filtering „hits“.”

Kanet et al. (1999) either assume that there is already a partnership architecture, i.e. the subsequent steps of MCCs objectives would be solved, or they suggest the installation of a broker who would be able to select the companies for the cluster from a given database which needs to be filled with all necessary information. The broker might be assisted by an intelligent agent who would be able to analyse homepages of companies in order to suggest potential cluster partners. If there is no pre-filled database, no partnership architecture, no idea for the intelligent agents what to search for, but there is a set of companies defined only by their regional affiliation and the political will to support the innovative power of that region, then we are faced with a problem which precedes the cluster formation phase, namely the Seed Identification Problem.

In the following this specific question will be addressed. After defining the Seed Identification Problem, it will be shown how intelligent document analysis techniques could be used as the (new) first step of the cluster creation process. The essential ingredients of the method are

1. the use of standard company document material,
2. the application of an intelligent document analysis system, and
3. the integration of semantic technologies.

It will be also described how the technology can be used for the development of a dedicated R&D-cluster. Eventually its use inside a company is discussed with the aim of discovering new business opportunities through automated business segment analysis.

The development of regional R&D clusters based on innovative technical instruments and requires cultural settings for the involved companies such as joined communication,

knowledge sharing and the usage of web technologies for collaborating. Virtual working is highly innovative and flexible.

Web-based communities are a real example for self organization of people. Open innovation is a change in attitude.

“Being open to the knowledge of others”, “common knowledge to create” and “knowledge to share with others” are the central principles. (Chesbrough, H. 2003).

Open Innovation is about radical upheaval in innovation management. The approach is for the active strategy of developing the collective knowledge base, creativity and innovation opportunities. The Internet is a central driver and success factor for the development of distributed, open and interactive innovation systems. (Michael Bartl, 2010)

“Taking the efficiency of R&D expenditure as a measure of the quality of a regional innovation system (Fritsch, 2002), there is significant variation showing some correspondence to a center-periphery hypothesis that suggests better conditions for innovation activity in the center as compared to more remote areas or regions characterized by a relatively low degree of agglomeration (the periphery). An analysis of the German regions in the sample has found that the interregional differences in the efficiency of their respective innovation activity can be explained to a considerable degree by differences in the amount of regional knowledge spillovers (Fritsch and Franke, 2000). This result supports the hypothesis that the interaction of the elements of a regional innovation system is of crucial importance for its performance.”

“In order to improve the R&D efficiency of local firms, it is important to construct a wide-range collaborative network within and beyond the clusters, although most clusters focus on the network at the narrowly defined local level. These characteristics may be important factors for the effective organization of cluster policies.” (Nishimura, Okamuro; 2009)

### **3. THE SEED IDENTIFICATION PROBLEM**

Of course, in most VE life cycle models (cf. Becker et al., 2005) there is a “pre-phase” preceding the formation phase. (Kanet, Faisst, and Mertins, 1999) introduced the “identification phase” as the first step of their life cycle model on the following.

“During the first phase of the development of a VE, the „Identification“ phase, the broker is the driving force for searching for and recognizing market opportunities, planning and drafting the value chain that will eventually comprise the VE, and estimating costs and revenues.”

And later

“During the identification phase of a VE, the broker can make good use of tools such as online databases (user interfaces needed), newsgroups and the WWW within the internet.”

Though their definition of the identification phase does not answer the question where the above mentioned support and information for the formation phase comes from. We identified this specific problem within the identification phase as the Seed Identification Problem (SEP):

Given a set of companies, select a perfect subset (non-empty, more than one) such that the selected companies are well suited to form a virtual enterprise. According to (Porter, 1998) the companies either follow identical business goals or their competencies fit to define a common new business goal.

In order to solve the SIP, a profile screening process for companies has to be defined together with a set of success criteria. The screening process requires a catalogue of company attributes and a soft matching function which map the attributes to the success criteria. In the following this approach will be presented in detail on the basis of a cluster creation process.

#### 4. THE CLUSTER CREATION PROCESS

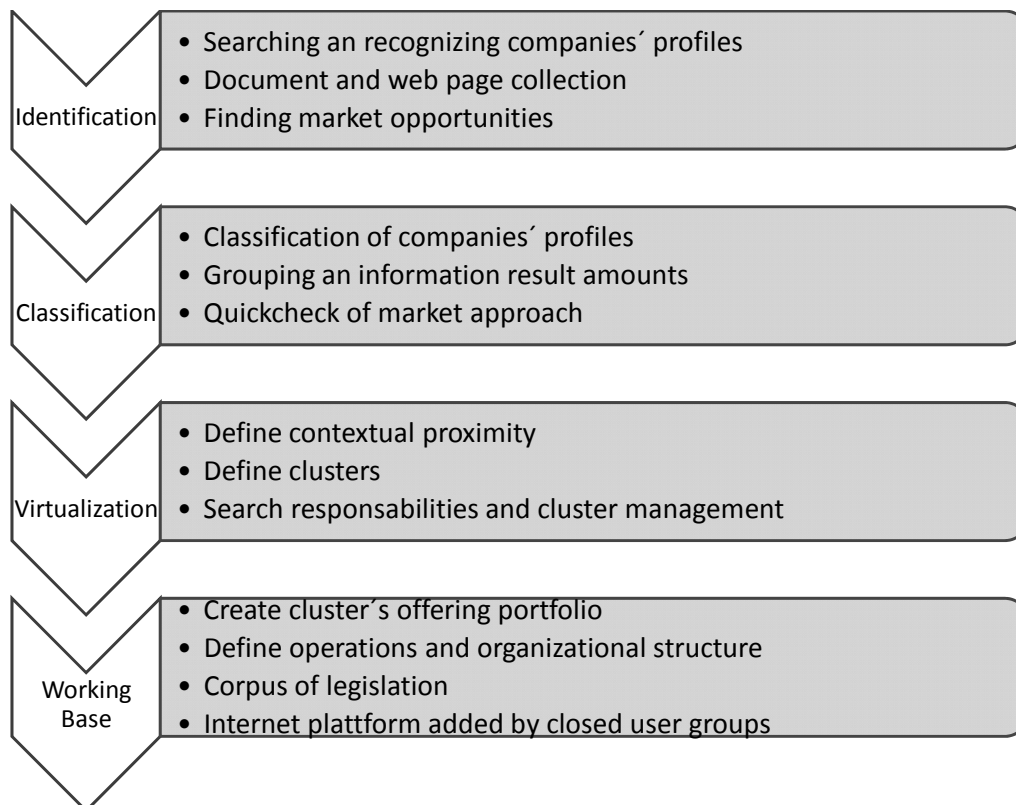
The cluster creation process is basically supported by intelligent searching, contextual comparison, and matching of unstructured data. Only two steps of the complete so called “four step process” have to be performed by the process owner. The acquisition of relevant company information and the analysis of the data is done by the conducted knowledge framework (Fitza, 2004) technology which can be based on an integrated document capturing, analysis, and clustering approach.

The integrated document capturing starts with the associative search engine that works similar to standard search engines (like google). The so called Nextbot Knowledge Framework (NKF) combines intelligent functionalities like fuzzy search, relevance assessment, resemblance search, contextual weighting and non-standard assortments of sets of documents. Core of the associative search is the extraction of summaries from documents. These summaries describe the essential content signs of every document. The associative search works linguistic-independently. Documents of different languages can be administered in the same index.

The first step in creating a virtual R&D Cluster is the aggregation to a summary document cluster that includes the contextual assortments of all documents and shows the whole cluster size. The organizational and technical framework supports an efficient hierarchical clustering process and enhances the knowledge development inside the cluster based on the defined legislation corpus. The exact definition of knowledge rules is the key success factor inside clustering processes (Becker et al, 2005).

Figure 1 visualises the four main phases together with their basic activities:

*Figure 1 The four main phases together with their basic activities*



Source: Deutsche Telekom, department of new business development: working paper, IuK Business Development – case study, pp. 12-18, Bonn, 2007

Summarizing the process which starts with a collection of documents and ends with a suggestion of potential company clusters the MCC core processing is divided into four phases with a total of four steps:

1. Development of unknown document collections (Phase I: Identification)
2. Grouping of searching result amounts (Phase II: Classification); Subdivision of big inhomogeneous categories (allows better Classification)
3. Semi automatic creation of Main- and Sub-Clusters (Phase III: Virtualisation); Set up a basic organizational structure by process owner (Cluster Management, supervisor competence fields and competence team members).
4. Define cluster product creation and corpus of legislation (between companies) by cluster management (Phase IV: working base)

## **5. CASE STUDY: DEFINING A CLUSTER DEVELOPMENT MODEL FOR THE MOBILE TELECOMMUNICATION**

The mobile communication cluster should become an innovative instrument of economic development.

Traditional economic development often does not achieve their goals. In particular, its primary goal: the creation of jobs, is usually far below expectations.

Fundamentals of European structural policy and the promotion of rural areas under Objective 2 are the following in Germany: The European Union follows with its structural policy, the objective of promoting economic and social cohesion among its Member States and to strengthen their regions. To this end it has a number of funding instruments and programs. As part of the so-called "Objective 2 funding," she supports others the economic and social development of rural areas in difficulty (formerly 5b promotion). (Roth-Harting, Dr. B. 2007)

*Excuse: Objectives and guidelines of the regional economic and structural policy (Objective 2/5b promotion) – Example of Rhineland-Palatinate in Germany:*

Socio-economic conditions beyond the Objective 2 program is embedded in the general economic policies of the state of Rhineland-Palatinate. The primary objectives of this policy are the creation and preservation of jobs, the support - especially small and medium enterprises (SMEs), as well as the systematic enhance the environment and the promotion of start-up. In addition to creating growth and employment environment, targeted economic development is a major concern in economic policy, since in it a useful tool for increasing economic power, creating jobs and improving the competitiveness of the company.

Rhineland-Palatinate Infra-Structure Bank (ISB) founded in 1993 with the investment and structure of the German government (state basis). ISB should transport the country's pioneering approaches to economic development of Rhineland-Palatinate: The integration of all support measures ensures competent support for entrepreneurs as well as an extensive service and financing offerings. The support by the ISB is in the form of grants, low-interest loans, guarantees and equity investments. The economic development illustrates on individual areas of support and for various development schemes. This in particular various dimensions illustrates the embedding of EU aid policy in the economic policy of the state of Rhineland-Palatinate.

*Overview of Economic Development approved funds by funding areas in Rhineland-Palatinate*

Different grant programs were placed in the field of objective 2, such as farm-regional development and promotion of economic infrastructure. The regional conversion program embedded huge farm-technology promotion and especially the promotion of innovative

technology-based start-ups in the field of research and technology infrastructure, technology consulting and technology transfer. The virtual R&D Cluster focuses the regional promotion of the MCC strategy and MCC positioning. Enhanced energy promotion and promotion of vocational education boost other industries as well. Location marketing and support of trade fairs and international business contacts are important objective II fields. (Huebber, 2001)

Wide range area promotion which was distributed in structurally weak areas, grants and subsidies achieves a much lower success than those that promote the strengths of a specific region. These strengths can also be rewritten as a regional field of competence.

#### *Similar Historical Approaches*

A successful example of a natural cluster was the cluster in Solingen, Germany. For over 700 years, companies in the steel and steel processing industries located within a radius of Solingen and created a site expertise with a worldwide reputation.

Another successful example is the natural cluster (but without historical background such as steel production in Solingen). Silicon Valley is a “modern” cluster of information and communication technology with a worldwide reputation as well. And Silicon Valley is a natural cluster.

The development of non-historically evolved cluster, artificially generated and economic policy initiated by clusters require a dedicated cluster management. The successful cluster management means the management and control of a corporate network with the aim to promote this (brand to establish itself), but in particular increase the economic success of the company group (cluster). The cluster management consists of a strategic and operational management as well as an integrated technology infrastructure (web portal with knowledge base). All measures of cluster management are designed to the strengths of the company / region to strengthen and to create sustainable and positive developments on the regional labor market. Important cluster management tasks include an analysis of the economic performance of a region. For the success of a cluster companies with a sufficient power potential are necessary, such as its access to the market and their ability to innovate. A clear benefit expectancy and benefits orientation customs a basis for active participation for the cluster activities. The willingness for active exchange of knowledge sharing. Establishment and maintenance of mutual trust and supported by all network controller for coordination of cluster activities and for networking, both internally and externally (Scheer, et al, 2007).

Creation of a regional skills assessment (Regional Intellectual Capital - RIC). The RIC is the regional strengths and weaknesses profiles and shows which industries will build in future jobs or reduction in employment levels. As part of a regional skill assessments in systematic form the strengths are highlighted. The weighting of the regional weaknesses are an important prerequisite as well to plan the regional positioning of a cluster.

Definition of core competency areas of a region (corporate strengths). Regional core competencies include joined the corporate strength of all cluster companies. Core competencies in R & D cluster MCC particular mobile application development, the logistics and inventory management, the supply of two-language human capital, the location close to the border are two European countries (Belgium and Holland) support the active involvement of local partners and conveyors. The involvement of regional partners is fundamental. It should be on a structured basis, since the competition situations occur often and partners have equal rights to participate. Recruitment of regionally and nationally leading companies / organizations for developing local businesses leadership position are very important for the overall project. There are companies used to have a regional level, which is sufficient to be able to implement a cluster strategy. The operationalization of a cluster management is determined by a number of factors. The most important and essential for the success of the cluster are those that are dependent on the organizational cooperation and gain immediate benefit-oriented tasks. Build a cluster organization (administration, management) as a form of



organization to set up a cluster management and cluster administration. Establishment of a technical infrastructure (cluster site) by a cooperative association with low barriers to entry for customers, and Internet-based technologies in the process flow. Development of a cluster guideline (rules for a successful co-operation) need to be established for cooperation to achieve the smooth running with low potential for discussion as well. Competitors relations have to be given special consideration in that topic. Definition of a joint marketing strategy and organizational means for the overall organization start appropriate marketing activities and budget sourcing. A form of financing by promoting (for example using Objective 2) is usually necessary. Cluster development and strengthening is a strategic aspect that requires a well-functioning management. Definition of current services and controlling key figures are placed to assist in the operational implementation of the cluster strategy. Sustainable checking the figures using Appropriate IT infrastructure (data models) are treated in the technical implementation. It is also important, to define the "Cluster integrated" technology. The integrated technology in MCC includes 4 important groups (Roettmer, 2006).

1. Content Management Service (CMS) includes research and storage for company's and product information of active and upcoming cluster partners. It is the central base of an increasing VE. The CMS groupware solution is a web-based groupware system, which must be integrated into the existing infrastructure as possible without much additional effort.
2. Collaboration (COL) supports effective communication and cooperation tools as cloud services, central databases, file sharing and virtual work rooms. Besides the exchange of content, the type of exchange is important, because this may affect the business workflow positively and has to follow the same cluster principles.
3. Market Place (MP): Assumes to develop a cluster centralized market sharing. A commercialization of all cluster activities are intended as an incentive for cluster partners, who wish to apply to regional customers. Because cluster's activity immediately secondary commercial objectives, but of secondary importance, it makes sense to deal carefully with competitive situations.
4. Know how management (KHM) and knowledge balancing are the most important strategic tools on the long run. It supports the share of knowledge and the development of a cluster branding value.

Knowledge Management and Intellectual Capital is the most important strategic figure in Cluster development processes. Knowledge and new product development define the future business of a cluster. Capabilities and willingness of staff, efficient processes, availability of relevant information or a high proportion of repeat customers are factors of which the welfare of cluster depends. It has therefore the Federal Ministry of Economics and Labour mission is to promote knowledge management and intellectual capital and actively in the implementation especially in the SME sector (Wognum, 2002).

Knowledge management is concerned with the question of how can the corporate governance and development necessary knowledge systematically anchored in an organization. That includes more than employee's know how. Knowledge includes all the necessary data, information and skills required an operation to solve all the operational and strategic tasks, such as working processes and well being business initiated by cluster activities. Knowledge is now represented as another factor of production to make advanced economies such as in clusters remaining competitive.

The focal point for the collection, structuring and representation of knowledge a cluster has recently developed the intellectual capital. The term is for practitioners in parts of the invoice or taxation initially misleading. For an intellectual capital statement is (still) no balance in the true sense in which knowledge is represented by fixed rules, such as the assets

in a trade or tax accounting. Rather, the intellectual capital is a tool which compresses the intellectual capital, human resources, business relationships and processes, and clear centrally at one point and federated results. Preparation and detection carried out in the three cluster dimensions (Edvinssan, 2001)

1. human capital, for example employee skills, employee behavior, training goodness
2. capital structure, e.g. internal processes, intellectual property (patents, rights, and organizational culture
3. relational capital, e.g. Customer and supplier relations, public relations, marketing

It is always the human capital, the employees of a company, the well prepared and motivated people working for cluster activities making cluster support regional successful.

#### *Benefits of Knowledge Management and Intellectual Capital for clusters rating*

But why should a company ever make the effort to grapple with the issue of knowledge management and intellectual capital? Finally, analysis of the operation and creation of intellectual capital are additional costs and extra work connected. The question is easy to answer, because medium and long term result from the separate representation of the intellectual capital very tangible benefits, such as

- Better representation of the "true" value of the company because not only monetary aspects to be considered (especially important in cluster with service-performance and high-tech industry)
- Compared with key business partners, such as suppliers or customers may, the advantages of their own enterprise comprehensively illustrated and demonstrated the who-(improvement of basic argumentation for cluster strategy)
- Internal be systematically detected strengths and weaknesses and it can be implemented in a targeted improvement measures
- Improvements in a cluster rating and thus easier access to fresh capital improvements
- Organization tool for recruitment of specialists and managers who can easily make a complete picture of company

Knowledge management is the most important prerequisite for the creation of an intellectual capital is the presence of a vision and a coherent, resulting accounting, corporate cluster strategy. This should include risks and opportunities arising from the current business environment, be included in the analysis of competition and technological operations. Formulation of goals and knowledge factors lead from vision and strategy embrace the goals for each dimension derived. These complement and complete the 'normal' business goals. Knowledge goals improving leadership skills, improving the skills and motivation of all employees, improving development and communication processes or expand business with customers and suppliers. (Mertins, 2005)

These are the objectives, the aim is to find each dimension three to five factors, which can be used to measure whether and to what extent resulting improvements in the objectives. In the area of human capital, factors enable employee skills, employee motivation and productivity. For the relational customer focus, strong supplier relationships or confidence needed. Human equity can for example describe with sustainable management, information and communication or-functioning processes. It is important that clear between objectives and factors are discernible relationships. An example of the human capital dimension to illustrate is if a goal is to improve employee motivation, etc. come as factors employee satisfaction, attendance rates and productivity. The change of these factors can be drawn valuable conclusions. This may be an indicator if satisfaction declines. (Probst, et al, 2003)

Self-evaluation of the initial state that ensures the factors are clear and easy to understand to make a proper evaluation and maintenance. It recommends the creation of a self-assessment and evaluation and will examine each factor based on the measured variables

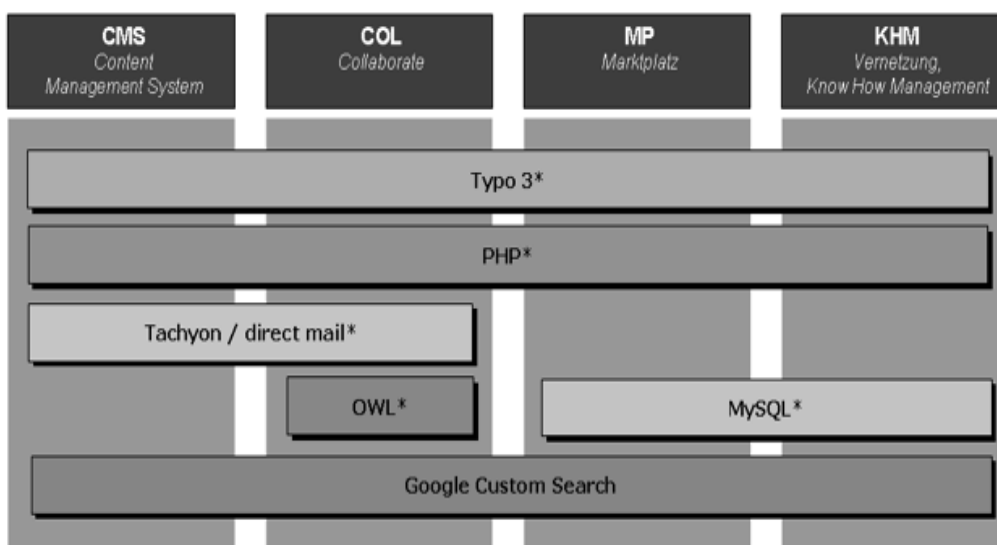
quality, quantity and systematic, to extent it and to achieving the goal of a particular dimension.

Knowledge balancing is a fairly new tool that makes it possible to grasp the increasing importance of intellectual capital of a company, analyze and present. The Intellectual Capital also represents issues that are present in similar in operation already, some figures for staff development, training and metrics for customer development. The derivation of knowledge goals and knowledge factors of the corporate vision and strategies are the basic of knowledge balancing. Knowledge balancing also serves as a communication and information tool to a third party, such as banking, suppliers or key customers is necessary for financing and valuing a cluster. Those obtained with the knowledge balance a good overview of the quality of the intellectual capital of the company and are able to carry out a proper evaluation, e.g. when a rating or the conclusion of contracts. At the same time the traditional financial statements is useful to complement the analysis of the soft factors and thus giving a basic stand.

Even if the intellectual capital is in literature and practice still under debate, it appears to be developing from today's perspective, an essential tool that helps to grasp the intellectual assets of a company systematically and let represent. Due to the ongoing legal activities at the national and international level is to be expected that the intellectual capital is established in the next few years in the business world.

Figure 2 illustrates the four main working groups: the interactions of the four main working groups cluster integrated technology.

**Figure 2: Four main working groups and their interactions**



Source: Deutsche Telekom, department of new business development: working paper, regional cluster operations, p. 22, Bonn, 2007

Technical services MCC:

The technical description of the case study MCC mobile communication cluster shows the six internet based software types which support the strategy of MCC (*knowledge managing, mobile communication, collaboration*):

- Typo 3 is a web based content management system on an open source licence model. "Open source is a kind of software. It is different from other software because the source code is available to everyone. The source code is a set of instructions for the computer, written in a programming language. Anyone can see how the source code works and can change it if they want to make it work differently. The opposite of open source is closed source. Closed source software is not available to everyone. Open

source is almost the same thing as free software. Open source and free software have been around for decades.

- PHP (PHP: Hypertext Preprocessor) is a scripting language that helps make webpages more interactive. It is an useful technique to simplify web programming.
- Direct mail is a licence based mailing software that allows to communicate is a professional way to a wide range of cluster members
- OWL is a licence based tool which enables cluster members to enhance their business in the cluster infrastructure (such as a web shop).
- MySQL is a database system used by many websites on the Internet. It allows individualizing specific custom need to create a virtual working base for cluster members and participants.
- Google custom search is a customized search engine that allows to reduce the search field onto the cluster based content and helps to reduce the variability of typical search questions to the cluster focus.

## 6. RESULTS OF THE RESEARCH AND FUTURE STEPS

Currently eighty active companies cooperate in four clusters. The four clusters are defining cluster offering services like a virtual enterprise made up of the individual companies. The core success factor is based on the “living” community supported by various technical solutions and the working field of knowledge management and knowledge distribution. To create market oriented offering portfolio based on aggregated individual competences (from research experts to product and market specialists) is the main factor inside the four (sub-) clusters. The cluster’s rule type should be easy to understand and practically to work with. Considering the massiv competition is the most sensitive point for the cluster management and for the eighty companies involved.

However, beyond all difficulties the (theoretical) advantages of cooperative virtual networking overcapitalizes the business competition. The results of the analysis are collected in Table 1.

*Table 1: Current results and project status*

Category	Description
product development	with the aid of different competences and partners (research, production, sales, etc.) different branches and lines a fully market oriented offering portfolio comes out
cooperation success	aggregated supplies provokes stronger market approach and encourages all members of the virtual cluster
technical platform	open source framework (content management system) fitted with innovative knowledge based solution (Nextbot) and added by different database solutions (DBS) such as (company-, collaboration-, community (blogging), information management- and dashboard-DBS)
regional knowledge identification	robots search and browse regional companies’ web pages and create regional knowledge profile
cluster set up	operational and organizational structure with defined responsibilities such as cluster manager, industry line manager, cooperative manager, quality assurance (will be installed soon)
competence fields	sector based professional groups with mobile focus such as m-industry, m-business, m-health, m-security (more groups will be defined)
proposed technical solution	national provider such as Deutsche Telekom AG proposed solution for regional business development organizations

Source: Deutsche Telekom, department of new business development: working paper, regional cluster operations, p. 28-33, Bonn, 2007

The category column gives the key factors for the project and the description column reports the corresponding outcome of the still running project.

Since the creation of virtual enterprises is not restricted to external companies, the same process and technology might be applied in big trusts in order to discover new business opportunities by combining available internal competence (or to avoid double work!).

An internal analysis seems to be even more successful because there are no restrictions to the documents and further context information, e.g. human resource files, could be used, as well as internal product descriptions. Even though in that case the information base is much richer than in the general extra-enterprise case, the Seed Identification Problem remains. A typical scenario is that units in a company offer services to customers, but not inside the enterprise. Often a unit does not know the portfolio of its sister unit. Using automatic screens of the unit's documents in the way discussed above gives rise to potential service chains which - in bundle - offers the customer a solution in one hand. Another scenario is the combination of complex products. The chemical industry deals with secondary substances which are generated during the production of a prime product. Finding chemical processes which use the secondary substances to destillate a new primary product is one of the innovation processes in this industry. Analysing the respective production sheets together with scientific literature would open new product opportunities. More examples for product innovation in VEs may be found in (Popplewell and Harding, 2005) and (Wognum and Faber, 2002).

*Acknowledgement:* We would like to thank Prof. Dr. Heinz-Juergen Mueller - University of Cooperative Education, Mannheim, Germany, for his valuable insights

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*Anna Parzonko*

#### 4.6 CONTEMPORARY IMPORTANCE OF LEADERSHIP IN THE CONCEPT OF COLLECTIVE ENTREPRENEURSHIP IN AGRICULTURE

**Summary:** Nearly 2 mln individual farmers, including a few thousands of product manufacturers, have the weakest position in the processing and trade chain from a manufacturer's field to a final consumer's table compared to frequently less numerous, though much larger, environment entities in agricultural trade, processing and commerce. Agricultural producers have to change their method of activity on the market to defend their own economic interests. Agricultural producers groups are an example of such activities. The paper presents contemporary importance of collective entrepreneurship in agriculture as well as the extent of organization in the agricultural producers groups in Poland in the space of the last decade. The paper pays also attention to the importance of effective leadership in the process of creation and functioning of such groups. These are the skills that an effective group leader should be characterized with are shown. An analysis of leadership styles was carried out and the most effective of them for collective entrepreneurship were specified.

**Keywords:** agricultural producers groups, entrepreneurship, leadership, leadership styles

### 1. INTRODUCTION

The contemporary model of organization management assumes that a success is achievable thanks to the use of a proper "philosophy of thinking", which may be defined as the orientation at the market entrepreneurship and as arousing in human resources an attitude of loyal, emotional engagement in the organization development. The main principles of such philosophy may include: market culture understood as the subordination of all actions to clients; clear, understandable goals, mission and strategies of the organization (a clear concept of the enterprise development prepared for changing market conditions); continuous improvement culture (innovativeness), i.e. seeking changes and reacting to them; recognizing people as the most important resources of each organization, capable of continuous development for its benefit (Penc, 1996).

A success of each human activity depends on many simultaneously impacting factors of which some are dependent, whereas others are not. Independent factors create so-called conditions for taking actions and they include inter alia currency exchange rates, taxes, competition, regulations of law, costs for means of production etc. Whereas human-dependant factors worth mentioning include: adopted operational strategies, distribution of obligations, adopted motivational system that is of integrative impact, adopted organizational structure or organizational – legal form, decision related to the choice of a leader and, what follows, adopted leadership style.

The necessity of farmers organizing in business structures results from such basic prerequisites as: 1) economic globalisation and its consequential risks, 2) specificity and characteristic features of agriculture as a sector of national economy, 3) style and philosophy of life and work of farmers. Producer groups constitute a counterweight; a positive reply towards structural transformation taking place in agriculture at the beginning of the 90s being the manifestation of the economy adjusting to operate according to new market mechanisms. They support local and national culture and tradition, the natural environment protection, and developing community ties. Irrespective of a farm size a farmer as a business entity is a small unit. Farmers organizing themselves into agricultural producer groups enable better

production planning and its adjustment to client needs, decrease of production costs per a farm by joint purchase of means for production, joint use of equipment, preparation of products for trading and organization of their sale, as well as better access to information. As a result of combining the capital and the above mentioned benefits farmers are likely to be more interested in investments and implementation of innovatory solutions into their farms.

The objective of this paper is to present the process of formation and development of collective entrepreneurship within rural areas as well as to indicate how important effective leadership of such group is in this process. The primary source of information used to fulfil the assumed objectives included the secondary sources of research material, mainly literature of the subject as well as the results of own surveys conducted among 150 farmers organized in 28 agricultural producer groups.

## **2. CONTEMPORARY IMPORTANCE OF COLLECTIVE ENTREPRENEURSHIP IN AGRICULTURE**

The term “entrepreneurship” appeared for the first time at the turn of the 18<sup>th</sup> and 19<sup>th</sup> century. The beginnings of scientific and research interest in entrepreneurship should be sought in the industrial revolution and the pioneers of nascent capitalism. It was related to the formation of the then new forms of management, administration, and economisation of social life by proper use of the capital, technical, raw material, and human potential. The capital allocation was accompanied by quite a risk. It was related to the chance of faster profit multiplication; however, it equally often caused a decline and bankruptcy. The entrepreneurship was explained in the works of the representatives of economic and social liberal thought. A. Smith, J. B. Say and J. Schumpeter are considered to be its precursors: (Potocki, 2000).

Presently the term entrepreneurship defines as a certain feature of actions aimed at rational and effective use of organization resources. The entrepreneurship defined this way is a multidimensional phenomenon. It may be for example considered in the economic (process) or social dimension.

The entrepreneurship in the economic dimension is understood as the mode of action consisting in taking up new, risky and unconventional tasks and in demonstrating initiative in their search and implementation in life. Thus it is the development-oriented action, is of innovatory character. The entrepreneurship in the economic dimension consists in:

- creating more effective organizational forms,
- introducing new factors of production,
- acquiring new sales and supply markets,
- launching new products (Kortan, 1997).

Thus one may risk making a statement that entrepreneurship is the actions of organized nature, oriented at the skills of generating and using innovatory ideas for achieving measurable benefits realized in risk conditions.

In a bit wider social meaning entrepreneurship is a feature, in fact a set of psychological features making somebody a good entrepreneur, such as dynamism and activeness in terms of noticing needs and improving ideas, the ability to take opportunities, the adaptation skill in changing conditions and readiness to take risks. Entrepreneurship is an individual feature of human personality, characterised with intelligence, innovativeness, the ability to perceive conditions and relations occurring between economic phenomena and the ability to organize trading, industrial and service activity ensuring the advantage of incomes over income costs. Entrepreneurship is the innovation consisting in searching for distinctness compared to what others do, finding more effective methods of operation to be used on the market and ensuring higher usability of products and services as well as increased effectiveness of management.



By its nature this activity is competitive to the operation of other enterprises (Fabiańska, 1986).

Depending on the method of task realization and the scope of human cooperation, entrepreneurship can be divided into individual and collective entrepreneurship. In case of individual entrepreneurship we speak of actions taken by an individual for the purpose of establishing and managing own company. Whereas collective entrepreneurship stands for organized, conscious and voluntary cooperation of people oriented at the achievement of a common goal, inter alia thanks to the bigger allocation of owned means, decrease of production costs (economies of scale and range), increase of the impact on the market (increase in the market share). Collective entrepreneurship gives the opportunity, in particular to smaller business entities, to develop their hitherto operations or to implement new ones.

One of the forms of collective entrepreneurship is the network organization created by a few independent organizations connected with one another by means of corporate bonds of various character. For example the following forms of integration may be distinguished: vertical one (network of organizations related to large companies), horizontal one (network of organizations manufacturing/producing similar goods most frequently within a given territory), vertical disintegration (network of small organization created by a large enterprise) or a network created via incubation.

Majority of agricultural producers groups are examples of horizontal integration. They are created by owners of farms specializing in the same production field, having comparable production capacities (farm area, marketability, financial and tangible resources) and functioning within the same territory. The intentional selection of farms is one of the conditions for such activities to be taken. At this point a local community leader plays an important role as he when noticing new possibilities takes pains to organize and manage a group of people.

One of the first definitions explaining the essence of functioning of such agricultural producer groups was formulated by J. Małysz (Małysz, 1996). According to him a producer group (producer team) is created from the bottom up and voluntarily for the purpose of collective sales of products. Joint marketing enables a group of farmers to increase their bargaining power and consequently to achieve higher prices for sold products and to incur lower prices for purchasing means for production. Farmers acting together enjoy an easier access to market and scientific information, to external financing sources as well as better investment possibilities. The restriction of farmers' activity mainly to common market does not alter the property relations. Such change may occur only when as a result of income earning a possibility of investing into plants for pre-processing, storage and transport appears. Consequential joint asset is managed collectively by farmers. However, it is totally separated from their individual properties. Each farm still is an independent business entity. A collective property, the owners of which are all members of a producer team, increases their bargaining power and allows achieving better sales conditions on the market. Such producer team is an example of the horizontal integrity whose substance is the connection of business entities belonging to the same production zone or distribution. However, in such case only the following activities are integrated horizontally: e.g. supply of raw materials, sales of agricultural products etc. Still though we deal with independent business entities.

### **3. ORGANIZATIONAL - LEGAL FORMS OF THE AGRICULTURAL PRODUCERS GROUPS**

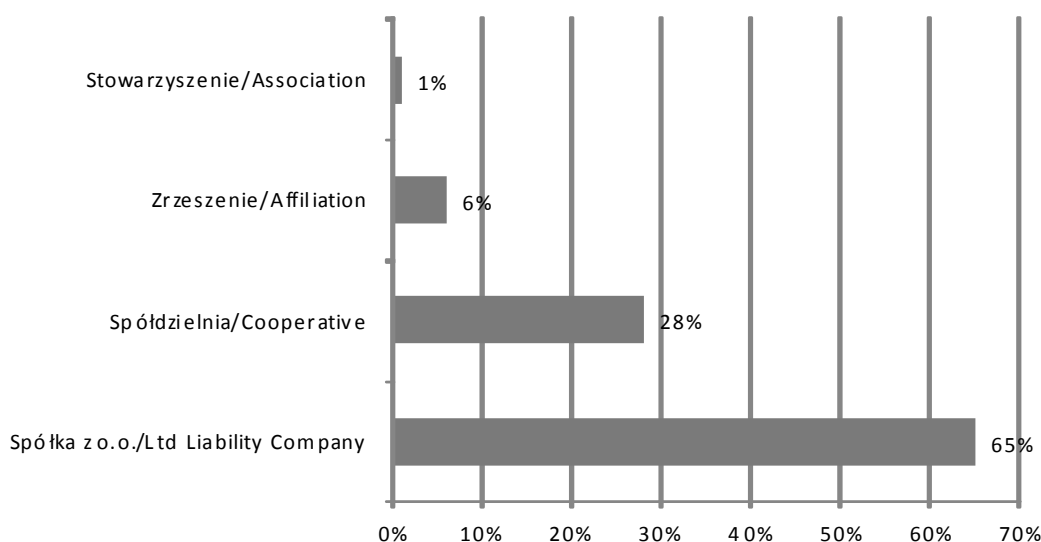
The group of agricultural producers is not an organizational-legal form. It is established in an entirely voluntary and spontaneous way. It bases its initial activity mainly on informal ties within the community of interest of individuals. However, wanting to pursue their business

activity for a longer period of time, and what is more important, to develop it, going into a higher step of organization and giving the group a defined business entity becomes a must. The choice of a legal form of a business entity that would suit best a particular agricultural producers group is a very important and difficult decision. A legal form should not restrict a business activity and it should enable the group to fulfil its goals in the best possible way.

While choosing a legal form for a producer group a few issues that will facilitate decision-making need to be considered.

Above all a clearly defined target as well as the range and scope of a planned venture are of significance. Farmers may organize themselves to achieve only economic targets, but also social or lobbyist ones. This is the goal that mobilizes a group of farmers is the element playing a decisive role in the choice of a legal form. If a producer group sets its primary sight on social, educational, lobbyist activity (e.g. to improve their skills and tools) it is enough to choose such form that will enable such goal achievement. Whereas, if the main intention of producers is to pursue a business activity, then in case of an association, such activity is not permitted anymore. These types of activity can be carried out in the form of a commercial law company, a civil partnership, a cooperative, or an affiliation.

**Figure 1: Percent of agricultural producer groups according to legal forms**



Source: Promotion of establishing agricultural producer groups. Ministerstwo Rolnictwa i Rozwoju Wsi [Ministry of Agriculture and Rural Development], Warsaw 2011, p. 4.

Out of the legal forms framers tend to choose a limited liability company and a cooperative most frequently (65% and 28% correspondingly). The two other forms to be chosen from enjoy smaller interest, i.e. an affiliation – 6% and an association – 1%. A form of a joint stock company is practically not used to establish producer groups inter alia because of its complex and complicated character of operation.

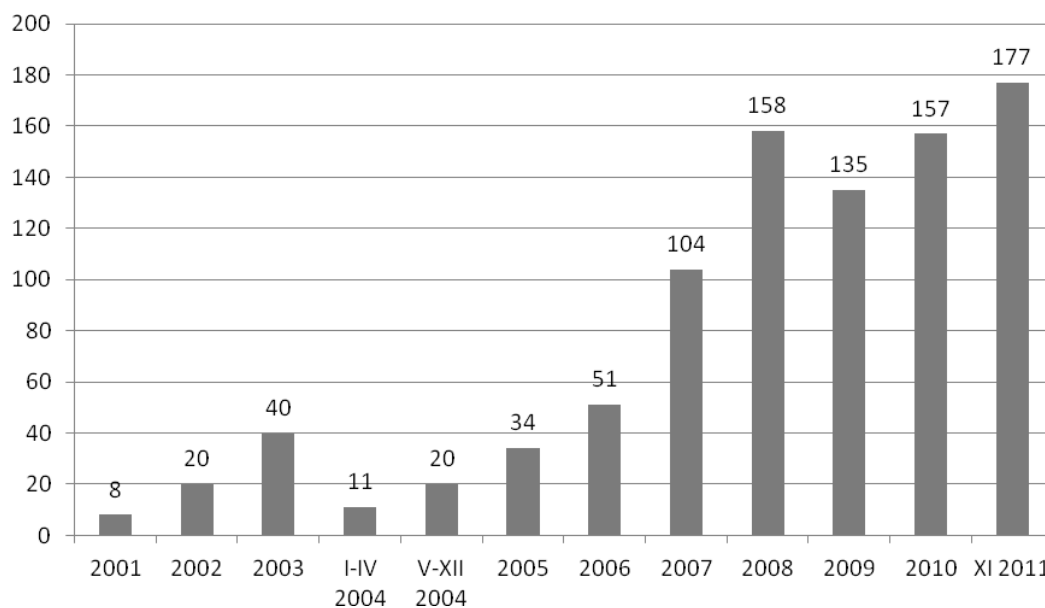
#### **4. ORGANIZATION STATE OF THE AGRICULTURAL PRODUCERS GROUPS**

The problem of agrarian fragmentation in the Polish country still is one of key problems of Polish farming, which was expressed in the Rural Development Program for the years 2007-2013 where the issue of agrarian fragmentation was classified as an indirect or direct reason for low capacity of agricultural production, low incomes of farmers, low crops, low quality production or also setting fields aside. It is estimated that out of over 1.5 mln farms in Poland only ca. 500 thousand are the farmers producing for the market. In the group of market farms

there are both farms specialized in the production of a particular product or groups of products as well as multidirectional, non-specialized ones. With a view to both of them, the act on agricultural producers groups and their associations was adopted in 2000 aimed at supporting the economic process of farmers organizing themselves and strengthening the market position of Polish agricultural producers (Journal of Laws of the year 2000 no. 88, item 983 as amended). It serves as the basis for agricultural producers to organize themselves in Poland and in turn to organize unions. Under this act, natural persons running a farm as defined in the rural tax regulations and natural persons carrying out an agricultural activity within the scope of special branches of agricultural production may organize themselves into agricultural producers groups so as to adjust the agricultural production to market conditions, to improve farming effectiveness, to plan the production paying particular attention to its quantity, quality and the supply concentration as well as to arrange sale of agricultural products and to protect the natural environment. Joint management of such group's activity whose target is to maximize the profit of its individual members may be called the collective entrepreneurship.

As of 30<sup>th</sup> November 2011 as many as 784 agricultural producers groups uniting ca. 25,000 members were registered in the registers kept by marshals of voivodeships from all over Poland. The biggest number of groups was established after 2004 since when a successive increase of the number of newly established groups has been reported. According to statistical data the agricultural producers groups developed most dynamically in 2008 when 158 groups were founded 135 groups in 2009 and 177 groups in 2011.

**Figure 2: Agricultural producers groups entered into the registers kept by voivodes /marshals in the years 2001-11.2011.**



Source: Promotion of establishing agricultural producer groups. Ministerstwo Rolnictwa i Rozwoju Wsi [Ministry of Agriculture and Rural Development], Warsaw 2011, p. 13.

Most producer groups is established in the regions, where there is the concentration of a given product, where there is a significant percent of dynamic farms which modernize actively and keep on investing in the productive capacity. They are most frequently bigger farms that are better organized and whose owners are young and more creative. The process of farmers organizing into producer groups takes place quicker in the areas of West and North-West Poland, where bigger farms, including specialist ones, constitute the majority.

In terms of the number of groups, the following voivodeships take the lead: Wielkopolska Voivodeship (173 groups), Lower Silesia Voivodeship (99), Kuyavian-Pomeranian

Voivodeship (98) and Opole Voivodeship (79). The weakest organization rate characterizes the voivodeships of South-East Poland where small and medium farms constitute the majority (Świętokrzyskie Voivodeship (11) and Małopolska Voivodeship (11)). The formation process of the agricultural producers groups in Poland is not yet advanced (only 2% of agricultural producers, who are mainly larger-scale producers, are members of the agricultural producers groups). From the point of view of market competitiveness and lobbyist power it is not the number of the groups themselves that is of importance, but the number of members such groups are composed of. The process of farmers organizing themselves into groups can be considered successful in case of Wielkopolska Voivodeship where nearly 3,000 producers are members of the groups. While in case of voivodeships, where in groups there are 100, 200 or 500 producers we can speak of the process failure and that refers to the majority of voivodeships of Poland.

Despite a large progress, particularly in recent years, still the economic organization rate of agricultural producers is one of the weakest aspects of Polish farming. The state of agricultural producers organizing themselves into groups varies in individual branches. So far 22 groups have been established per 35 products and product groups for which agricultural producers groups may be created. The vast majority brings together producers of cereal grains, oilseeds, pigs and poultry. Despite numerous efforts made by the state authority to support the formation process of agricultural producers groups, the organization state of Polish farmers is still very low.

The developed activity of various agricultural institutions and organizations, mainly agricultural advisory centres, apart from social and economic reasons, is yet another important motif for farmers to organize themselves into groups. These centres belong to the institutions that thanks to advisors employed there support educationally all positive changes in farming. Advisory institutions try to provide full-scope consultancy related to the process of formation and operation of the agricultural producers groups, the evidence of which is a large-scale informative activity of advisory environments (concerning targets of such group activity, possibilities and methods of its operation, presenting a detailed analysis of the agricultural market, present conditions and perspectives of the operation on the market).

Methods of agricultural consultancy are changed or modified. To be able to provide farmers forming agricultural producers groups and commencing joint activity with assistance new elements within consultancy have appeared and they are as follows: consultancy within agricultural law, economic consultancy, marketing consultancy and technological consultancy oriented mainly at the improvement of product quality and gradual orientation of group members at a uniform production process, which sometimes requires the introduction of some changes into the production profile, the increase of the specialization extent and the size of particular production.

## **5. ROLE OF LEADERSHIP IN THE FORMATION OF THE AGRICULTURAL PRODUCERS GROUPS**

The essence of agricultural producers groups' functioning is based on mutual assistance and cooperation. It is all about the cooperation factor that is of conscious and voluntary nature and based mainly on the means of the ones concerned. The essence of collective entrepreneurship expressed in the form of agricultural producers groups can be looked at from different points of view: economic, social, political, and ethical one. The agricultural producers groups should not be identified with a pure economic category.

A lot of both endogenic and exogenic conditionings are bound to influence the operation of agricultural producers groups. One of the most significant conditionings that are identical for each group are the features characterizing a social group understood as a certain number of

people distinguished on the grounds of formal and informal membership criteria, feeling the community spirit with other group members or such individual between which interactions of relatively fixed model take place. These features include the group target, group norms, group structure, group leadership and group cohesiveness.

The dynamics of formation and functioning of the agricultural producers groups, in fact, does not differ from the dynamics of social groups described by social psychology researchers. For example, Aronson in his work *The Social Animal* when explaining functioning of individuals in a society emphasizes that man is by his nature a social creature and only functioning in set social structures can feel comfortable and safe. Starting with such assumption, we may adopt the thesis that the provisions of proper conditions for functioning of agricultural producers groups will allow to popularise this form of cooperation. One of the conditions for success is the effective leadership consisting in the ability to create and manage a group. A characteristic feature of human groups is its hierarchicalness, i.e. having a leader who but for managing and realizing tasks may also prevent inner conflicts from taking place. His position is stronger; it is to him that other member of the group most often subordinate voluntarily. Such situation lasts until the breakdown of interest between the leader and the group takes place. Then we may deal with a breakdown of the group or a change of the leader (Krawulski, 2000). At the very beginnings of their functioning the agricultural producers' groups consultancy teams played an important role within this scope. By propagating, the idea of collective entrepreneurship in farming advisors established cooperation with leaders of social communities and encouraged them together to unite. As the surveys conducted among members of the agricultural producers groups show it was the advisors who had the biggest influence on decisions related to establishing a group. The support in terms of consultancy at the decision-making and organizational stage (choice of the organizational-legal status, preparing statutes, preparing documentation necessary for group registration etc.) resulted at the beginning of the 90s in the appearance of many initiatives of formation of such business entities controlled by farmers. Unfortunately, a large number of then established agricultural producers groups have never even commenced their business activity. Leaving aside the fact that the group formation process is difficult the slow pace of development of this type of organization was the consequence on numerous barriers arising from external conditionings during that period (no legal regulations related to producer groups, no financial and organizational support, unfavourable tax system etc.) as well as internal barriers related to a farmer (the biggest barrier was the mentality of farmers themselves and difficulty to find a leader with a vision who would be able to lead such group of agricultural producers). It is an often case that members of the newly established groups can be divided into those who participated actively in the group formation and still strive for its development and those who join the group for preventative reasons (so as not to be worse than others) and do not participate actively in group activities (Parzonko, 2006). Such situation is a contradiction to the idea of healthy cooperation. Despite that, there are many examples of receiving financial support by groups which has a motivating effect on others, also the awareness among farmers increases and possible benefits of engaging into joint activities on the market are visible.

Hitherto experience within the development of the agricultural producers groups proves how important is the role of effective leadership in this process. A good leader gives the group a chance for effective activity oriented at the achievement of group goals and its further development. A leader is an individual who is perceived by other group members as the one entitled to manage the group. He may be chosen or appointed for this position. He may also become a leader as a result of interactions or voting taking place in the group (Fujishin, 1997).

Leadership is the process of influencing others for the purpose of achieving set goals in set situations without using techniques excessively based on extortion (Kuc, 2004). Leadership consists in the use of influence without applying extortion measures with the intention to

shape a group or an organization, to motivate behaviours oriented at such goal achievement (Griffin, 1998). For this reason, the leader is characterized as the person influencing the behaviour of others without the necessity of using force. In the process of formation and operation of agricultural producers groups, the person of a leader plays a key role, because, as Krzyżanowska notices, even formal groups may find effective functioning difficult if they do not have an active, operative leader engaged in the group affairs (Krzyżanowska, 2000).

Depending on a group, its goal and existence stage, the manager may fulfil a number of varied functions such as for example:

- the coordinator of the group activity,
- the person setting targets and policy of the group,
- the person planning methods and means for the purpose of the achievement of the group target,
- the representative of the group externally,
- the controller of intergroup relations,
- the role model of behaviour for other group members etc.

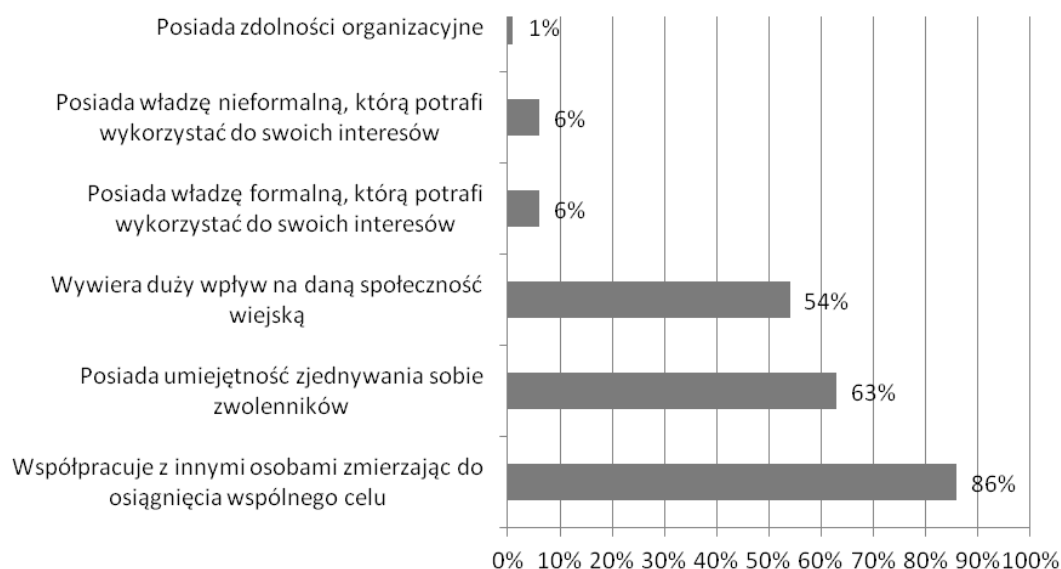
The ability of effective and efficient group leadership is conditioned by both inborn predispositions as well as life experience of an individual. Authors dealing with the issue of leadership present different views as regards the attribution of importance to genetic and learned factors. Some maintain that inborn features are most important, that they condition certain reaction methods and styles of their contacts with a group. Whereas others emphasize that leadership skills are acquired while enlarging one's base of experience and field of self-awareness (Woyach, 1995). The knowledge about human reactions to social influences such as submissiveness, identification and internalisation allows to remember and systematize experience so that it could influence positively a leader's further activity. *Submissiveness* is the behaviour of a person who is motivated by a desire to be awarded or to avoid punishment. Such behaviour usually lasts as long as the promise of award or threat of punishment is used, thus it is short-term. *Identification* is the reaction elicited by an individual's desire to be similar to a person such impact comes from. An individual in fact starts to believe in opinions and values that they assume, though not always strongly. If somebody assumes a certain view in the course of identification and then learns counterarguments presented by a trustworthy and knowledgeable person, they are likely to change their opinion. *Internalisation* of any value is the most permanent reaction to social influences. If we find a person exerting influence trustworthy and having good judgement of reality, we accept a conviction expressed by such person and include it into our system of values. The motif of the aspiration for rightness that we deal with in case of internalisation is a great and self-support force. As for submissiveness an important component is the power that a person exerting influence has in terms of awarding for submissiveness and punishing for the lack of submissiveness; as for identification the decisive component is the attractiveness of a person we identify with, whereas as for internalisation it is the credibility of a person delivering information. These three components jointly compose the competence of a contemporary organization manager. However, the agricultural producers groups cannot be labelled like this due to the dissimilarities arising from their character of activity, different structure of mutual ties and internal impacts and, above all, the culture shaped by many generations of farmers. Thus, while divagating upon efficient leadership in the agricultural producers groups the greatest importance will be placed on credibility, then attractiveness of a leader, whereas power (arising in addition from the possibility of awarding and punishing) may not help at all, but, in fact, it may hinder such group management. Group members perceive the person of a leader as attractive in terms of personality features, as valuable and thus estimable and likeable. Simultaneously, a leader is also a person who is likely to have information necessary for efficient functioning of the group, that are the grounds of any action, a person cooperating

with institutions supporting the functioning of producer groups and organizations with which a group will cooperate or has already started the cooperation.

To create a primary profile of competences of the agricultural producers group-leader empiric survey was conducted among 150 farmers organized in 28 groups were conducted. Majority of group members surveyed was of the opinion that the most important features of the leader are:

- ability to cooperate with others to achieve a common goal (86% replies),
- ability to win the favour of followers (63% replies),
- ability to exert influence on a given rural community (54% replies).

**Figure 3: Profile of the leader in the opinion of agricultural producers' group member (%)**



**Legend (translated from the top):**

- Having organizational skills
- Having informal power that he is able to use for his interest
- Having formal power that he is able to use for his interest
- Exerting a large influence on a given rural community
- Having the ability to win the favour of followers
- Cooperating with others to achieve their common goal

Source: own survey

From the analysis of farmers' opinions concerning group leader it may be concluded that a person characterized with a democratic style of management will be the most effective leader. It is a person cooperating with other group members, sounding them out while formulating tasks, consulting their distribution and purposefulness. Such leader prefers collective work, tries to eliminate possible barriers hampering group communication. He tries to create a good atmosphere in his subordinate group and his contacts with subordinates are based on partnership. A small percent of respondents showed that their group leaders used the fact of having formal/or informal/ power to pursue their own interest (6% replies each). The attitude of respondents to the leader's organizational skills is interesting as they were appreciated by only 1% of respondents. Failure to notice the necessity of having organizational skills arises from the fact that the most important activities concerning the organization and the entire process of group establishment were taken by rural advisors in most cases

The effectiveness of leadership impacts (in other words leadership styles) is conditioned not only by skills and personality predispositions of a leader, but also by factors that he has no influence on or that he exerts insignificant influence on. These factors may include the

character of tasks a group faces, time restrictions concerning the performance of these tasks as well as expectation of other group members. Applying the path goal theory developed by R. House (the "path to goal" concept" arises from the conviction that efficient leader shows his path to help his subordinates to overcome the distance between the place they are in presently and the goal) four styles of leadership behaviours can be distinguished:

- a directive leader i.e. the one who informs subordinates what he expects from them, who programs works and gives detailed guidelines as regards the way tasks are to be performed in;
- a supportive leader is a friendly person, demonstrating concern for the fulfilment of subordinates' needs;
- a participative leader is such type of a superior who sounds his subordinates out and makes use of their help in a decision-making process;
- an achievement-oriented leader sets subordinates difficult goals and expects from them the highest effectiveness (Robbins, 1998).

In case of the issue of leadership in agricultural producers groups, not every style mentioned above will be effective. The most effective leaders do not limit themselves to just one style. Every week they make use freely and equally of all leadership styles which are adjusted to the particular situations. Since a producer group leader is selected from a group of people who know one another well, who are often on friendly terms and function in the same local environment it is a highly probably assumption that traits of supportive and participative styles can be recognizable in his actions.

Primarily a contemporary leader inspires and animates necessary actions, relies on competences, commitment, independence and responsibility of other group members so that the group could implement positive changes and achieve set goals. A good leader is the person who is able to carry out a pertinent analysis of the situation and to suggest how to achieve goals, finally to distribute duties in such a way that everyone would deserve credit for the goal achievement. A leader ensures the best opportunities for effective initiation and management of a group cooperation at the implementation of various projects and social and economic activities. Well-organized activities of agricultural producers groups' members give a chance to achieve the so-called synergism effect, thus to achieve as a result of cooperation much better outcome than the sum of outcomes that farmers may achieve individually. The method of actions chosen by a leader and the difficulty degree in terms of a given group management depend largely on features of other group members. If its members have high qualifications and a vast range of experience and knowledge it may be assumed that, they will cope with a task with a small involvement of a leader. The higher the qualifications, experience and knowledge of group members the easier it is to manage a group.

The most desirable form of leadership in a democratically managed group is a so-called shared leadership in which each group member feels responsible for the group and effects of its activities. There are two dissimilar approaches explaining the leader-selection issue. The first approach points at personality features of potential leaders, the other one – on the situation, which requires particular actions that may be taken by only a given person and not by another. In case of the way agricultural producers groups function an intermediate concept seems best, i.e. the concept that conditions a leader-selection on both a situation as well as his certain features. For example if the situation a group requires activeness, in such case a person having such feature will become a leader, whereas, if the situation requires the ability to solve particular problems, a person who is able to solve such problems may become a leader. In the moment of a particular task realization the persons that within a given scope is most competent becomes a group leader. The more the group members share leadership functions, the bigger the motivation to act jointly is and the more proper the decisions jointly made are (Boguta, 2008).



Each group member should be aware of his rights as well as of his obligations towards the group, as a success of the group and thus of each of its members depends on proper fulfilment of obligations by members themselves and by the board. For this reason it is important to define clearly the role of members, board and employees in a group.

Taking into consideration recognized preferences, advantages and limitations of group members a leader can manage the team work skilfully to use the energy of people maximally, to extract their entire potential, to develop group activities and to achieve successes.

Roles those are advantageous to cooperation and development of a group:

- motivator – a good spirit of a group, activates to action, gives credit,
- listener – is able to listen carefully,
- rock – gives support to persons who need it, is warm and cordial, enjoys trust and liking,
- harmoniser – encourages to cooperation, strives for compromises, tries to solve problems and to prevent disputes,
- tension reliever – jokes in difficult situations, like laughing, a guard of principles – watches the principles of cooperation and communication,
- fair – watches even distribution of obligations (Boguta, 2008).

The key role within the framework of the organization of group work and protection of its functioning in the agricultural producers group is played by the board. It is best if real group leaders are selected for the board. The board manages current group activity, represents it externally as well as takes all most important decisions that are not restricted for other bodies. However, particularly in small groups each group member feeling responsible for the group and effects of its actions should be ready to act jointly for the benefit of the group.

## 6. CONCLUSIONS

The organization state of Polish farmers put them in a difficult income-competitive position. It refers especially to farmers with medium and small production capacity. In their case, the process of organizing themselves in groups has not brought expected results. Thus initiating for these farmers new, decisive activities aimed at their massive organization into groups by creating proper legal terms, by intensified informational - promotional and educational actions as well as by increasing and shifting financial support to the environments that do need such support is worth considering.

One of the factors that has positive impact on collective entrepreneurship in farming is effective leadership. A good leader is the key to a producer group's success, though the dynamics of a producer group's functioning shows that depending on the group development stage different types of leaders are desirable. Thus, a so-called shared leadership may turn out to be most effective.

Within the space of last several years, the process of growing awareness of benefits that collective entrepreneurship may bring could be observed in rural population. A successive increase in the number of agricultural producers groups shows that this form of cooperation has inscribed for good into the organizational structures of entities functioning in farming.

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*Grażyna Karmowska*

#### 4.7 INNOVATIVE ECONOMY IN THE POMERANIAN REGION OF POLAND

**Abstract:** Research and experimental development activity (R&D) comprises basic research, applied research and experimental development. R&D entities are defined as economic entities which, along with their primary activity, have their own R&D facility and conduct R&D activity, mostly in the area of experimental development.

The purpose of this study is to present the progress in research and development activities in the Pomeranian region (comprising two provinces: West-Pomerania and Pomerania) in the years 2004-2010. Employment rate, expenditure and revenue in entities involved in research and development were considered. Employment in R&D activities refers to employees directly engaged in R&D and dedicating at least 10% of their nominal work time to R&D work. Expenditure on R&D includes types of expenditure, structure of resources, as well as the scope of industrial product and process innovation. The revenue considered is the revenue generated from the sales of new or significantly improved industrial products. Statistical and econometric methods were used in the study to present the dynamics of change and interconnections between the factors affecting the progress in R&D activities in the region analyzed.

**Keywords:** R&D activity, innovation, innovative enterprises, employment in the R&D sector

### 1. INTRODUCTION

„In times of great economic challenges and global vulnerability, innovativeness is perceived as a way to overcome difficulties, ensure and reinforce economic growth, and in result, as a chance for an efficient solution of social problems. In Europe in particular, innovations can play a significant role in pulling economies from recession and in identifying new sustainable sources of growth and competitiveness. Lasting competitive advantage can be achieved, above all, by continually expanding the country's innovation potential. Innovativeness is indispensable to prosper and thrive in today's extremely competitive global economy. Implementation of new, significantly improved products, processes and methods becomes the key to enhance efficiency and create new jobs. The policy of innovation is extremely important for the recovering from crisis, yet it should take into account the dynamics observed in global economy and transformation of processes, therefore statistical surveys must be taken into consideration when formulating this policy” (Innowacyjność, 2010).

The State Development Strategy points to the “Enhancement of Economic Competitiveness and Innovation Potential” as the 1st Priority. Overall expenditure on research and development in Poland amounted to less than 1% GDP and in 2010 this ratio was 0.74% GDP (foreseen at 1.5%). However, this ratio was above 1% GDP in other EU member states and in 2010 it reached 2% GDP (source EUROSTAT)

“In developed economies the main driving power behind increased productivity is actually innovation based on three pillars: research and development (R&D), knowledge and education. Innovativeness becomes one of the key indicators of competitiveness. Innovative activities generate added value for industry and services, as well as enhance the country's competitive capacity on the international market.

Innovativeness is the key element in increasing efficiency and economic growth, especially today, with the instant technological changes taking place all the time. The growth trends in highly developed countries show that only by creating competitive advantage based

on knowledge and innovation, a country can ensure sustained development and guarantee new, more attractive jobs for its citizens. Currently, Poland finds itself in a specific moment of development. Hitherto competitive advantages, based on low labour costs, are increasingly losing their importance. It thus becomes necessary to create new competitive advantages based on knowledge and innovation, as they are the basic determinants of long-term economic development. From this perspective, it is important to focus on and strengthen the innovation capacity of enterprises, and especially their R&D activities, as these are the determinants of competitive advantage in a globalized world.” (Innowacyjność 2010, p.9)

In modern days, the development of regions is increasingly being more determined by skilful management and application of knowledge. Developmental success of a region depends mostly on adequate knowledge, which is a prerequisite for introducing innovation in any region. The capacity to absorb innovation depends on the region’s status in terms of research and experimental development, quantity and quality of personnel employed in the R&D sector, overall expenditure on R&D, as well as educational potential reflected in the number of university and college students.

Only the regions, which are innovative, can compete efficiently. An innovative region can be defined as a region capable of changing, improving, implementing reforms and innovative solutions in various areas of socio-economic life with the aim of boosting mechanisms supporting development in the region. Regional innovation can be determined by measuring the innovation level of particular groups of factors, inter alia:

- Innovation level of enterprises located in the region,
- R&D potential of the region,
- existence and organization of the environment for entrepreneurship,
- level of the social and human resource capital in the region.

Knowledge and information are the determinants of competitiveness of both present day enterprises and entire regions. If knowledge possessed by regional economic entities is unique and difficult to acquire by competitors, it enables the acquisition of competence, which will in turn reinforce the region’s strong position among other regions, and the innovations in the region will stimulate its development in a lasting way. (Kamińska, Fryc, Majecka 2007)

Innovation should be understood as the capacity and motivation of enterprises to constantly seek and practically apply the findings of R&D work, new concepts, ideas and inventions. The term ‘innovation’ also refers to improvement and development of existent production and application technologies, service-related technologies, as well as implementation of new solutions in organization and management, improvement and development of infrastructure, in particular infrastructure related to the gathering, processing and diffusion of information (National Strategic Reference Framework 2007-2013).

“The largest catalogue of instruments supporting innovation is offered by the *Operational Program Innovative Economy, 2007-2013* (OP IE), aimed at boosting Polish economy through innovative enterprises. In a knowledge-based economy, innovation is one of the factors building competitive advantage, since the creation of new products and technologies is necessary which enables an economy to compete successfully on the global market. OP IE funds are allocated mostly to investment projects that result in new or significantly improved products. The support is given mostly to implement product and process innovations.

OP IE support instruments are addressed to, inter alia, entrepreneurs, including Ministry of Treasury, institutions providing support to innovative enterprises, as well as business environments institutions and their networks.” (Poland 2011, p.247)

Herein below the description of the Pomeranian region of Poland is presented, with focus on broadly understood resources, significant in the context of building innovative economy.

## 2. DESCRIPTION OF THE REGION

The Pomeranian Region of Poland comprises two provinces: the West-Pomeranian and Pomeranian province. These are neighbouring provinces, located in the northwestern and northern part of Poland, in the same climatic and geographical area.

General outline of the subject provinces in the Pomeranian region has been presented in Table 1.

*Table 1: General outline of the Pomeranian Region (as for 31.12.2010r.)*

Basic facts	Pomeranian Region			
	Including provinces		total	% Poland
	West-Pomeranian	Pomeranian		
Territorial area (thousand ha)	2 289	1 831	4 120	13,2
Population (thousand persons)	1 693,3	2 219,5	3 912,8	10,2
Persons per 1 km <sup>2</sup>	74	121	95	-

Source: own study based on data from the Polish Central Statistical Office

The Pomeranian Region covers the total of 4120 thousand hectares, that is 13.2% of Poland's territory. Population of this Region makes up for 10.2% of Poland's population. Population density in the Region is not uniform, with population 63% bigger on average in the Pomeranian province.

The Pomeranian Region is considered economically well-developed, which is reflected, e.g., in its GDP, as well as the revenue and expenditure of the two provinces. Gross Domestic Product, as a basic indicator of national accounts and national output, reflects the condition of the economy. Increase or decrease of real GDP is a measure of economic growth of the region. In the two provinces being the focus of this study, GDP has been rising continually, although the rate at which it grew wasn't steady.

Table 2 presents the revenue and expenditure for years 2002, 2005 and 2010, and their dynamics in the Pomeranian Region provinces.

*Table 2: Revenue, expenditure and GDP in the Pomeranian Region provinces*

Indicators	Provinces									
	West-Pomeranian					Pomeranian				
	2002	2005	2010	2005/2002	2010/2005	2002	2005	2010	2005/2002	2010/2005
Province's total revenue (mln PLN)	201,5	272,7	735,8	1,35	2,70	248,3	391,1	724,6	1,58	1,85
Province's total expenditure (mln PLN)	200,7	328,3	786,1	1,05	2,39	249,8	442,7	872,0	1,77	2,00
Revenue/exp. expenditure (%)	100,4	83,1	93,6	-	-	99,4	88,3	83,1	-	-
Overall GDP (mln PLN)	35 234	40 533	52389	1,15	1,29	46 023	55 602	76243	1,21	1,37
Share in national GDP (%)	4,51	4,12	3,33	-	-	5,89	5,65	5,39	-	-

Source: own study based on data from the Polish Central Statistical Office

The economic potential of the two provinces is proven by the fact that overall GDP in 2002 of the West-Pomeranian and Pomeranian provinces was respectively 4.51% and 5.89% of Poland's GDP. In the following years, this share declined slightly, remaining at the level of

over 5% of share in national GDP in the Pomeranian province, whereas in 2010 it dropped down to 3.33% in the West-Pomeranian province. For the whole Region, in the year 2010 the share in national GDP was approx. 9% and it was lower than in 2002 by approx. 1%.

In 2002 the West-Pomeranian province revenue to cover its expenditure, whereas the Pomeranian province showed a minor shortage of revenue to cover its expenditure (approx. 0.6%). However, in 2005 both provinces had difficulty in raising sufficient revenue to cover their expenditure (shortage of approx. 17% in West-Pomerania and approx. 12% in Pomerania). In the following years, an improvement was observed only in the West-Pomeranian province. In 2010 the province's expenses were covered in approx. 94% by its revenue, partly thanks to the subsidies received (about 51% of revenue). Unfortunately, the Pomeranian province fell short of revenue by about 17%, though also in this province subsidies had a significant share in the province's revenue (approx. 38%).

The Region's potential, besides its financial situation, is also reflected in labour force available, expressed in the number of working and professionally active persons. The term 'professionally active' encompasses all working persons (employers, employees, self-employed persons, family members rendering their work without payment) and officially unemployed persons. Students doing their internships, housewives and persons living off their equity are excluded from this group. Table 3 presents changes in the population structure.

Working-age population in both provinces constitutes about 60% of the total inhabitants. Considering the three sectors: farming, industry and services, the biggest number of people work in the last sector. In the West-Pomeranian province, it was about 63% of the working population, remaining on roughly the same level throughout the study period, and about 60% in the Pomeranian province. It is commonly believed that such a big number of people employed in the service sector indicates the general well-being of the society.

**Table 3. Population structure in the Pomeranian Region provinces**

Indicators	Provinces									
	West-Pomeranian					Pomeranian				
	2002	2005	2010	2005/ 2002	2010/ 2005	2002	2005	2010	2005/ 2002	2010/ 2005
Overall % of working-age population	63,7	65,6	65,7	1,03	1,00	62,8	64,3	64,4	1,02	1,00
Structure of working population in sectors (%):										
- agricultural	9,7	9,2	9,8	0,95	1,07	9,7	9,3	8,9	0,95	0,96
- industrial	27,8	27,6	26,9	0,99	97,5	30,7	30,1	30,0	0,98	1,00
- service	62,5	63,2	63,3	1,01	1,00	59,6	60,6	61,1	1,02	1,01
Employment rate (%)	45,0	41,8	46,2	0,93	1,11	48,2	43,5	50,7	0,90	1,17
Unemployment rate (%)	-	25,6	17,8	-	0,70	-	19,2	12,3		0,64
Population growth (‰)	0,5	0,5	0,5	1,00	1,00	2,0	2,2	3,4	1,1	1,5

Source: own study based on data from the Polish Central Statistical Office

The employment rate in both provinces was reported at less than 50%, which is not an optimistic indicator. In Pomerania it exceeded 50% in 2010, whereas the rate for Poland was approx. 60% and approx. 66% for the European Union. The unemployment rate was also very high, though it shows a declining trend. In West-Pomerania it dropped from 25.6% in 2005 to 17.8% in 2010 (decrease by approx. 30%). In Pomerania, the unemployment rate was much lower and it declined from 19.2% in 2005 to 12.3% in 2010 (decrease by approx. 36%).

It is believed that the population growth depends on economic development, that is the higher the level of economic development, the lower the population growth. However frequently this trend is exhibited, it can yet not be treated as a rule. In the study period, the population growth in West-Pomerania remained on a steady level of 0.5‰ and in Pomerania it showed a rising trend from 2‰ in 2002 to 3.4‰ in 2010. Yet, it cannot be concluded that

the West-Pomeranian province is more developed economically than the other province considering the economic indicators presented in Table 4.

The economic potential of the Region is reflected in the per capita values, i.e. gross added value, investment expenditure, industrial sales and Gross Domestic Product. In both provinces these indicators are on the increase. Investment expenditure in both provinces was on a comparable level and in the period analyzed, their growth rate was the same.

In West-Pomerania GDP per capita was 20.7 thousand PLN in 2003, increasing by 15% in 2005 and by astounding 50% in 2009, as compared to the year 2003. The growth dynamics was even more pronounced in Pomerania, with the initial levels in 2003 slightly higher than in the other province. In 2009 GDP per capita in Pomerania was higher by approx. 11% than in West-Pomerania.

The dynamics of professionally active persons also shows certain differences. In the West-Pomeranian province the number of professionally active persons decreased by 3% in 2005 as compared to 2002, while in 2010, compared to 2005, the employment rate was higher by over 4%. In the Pomeranian province, the professionally active population remains on the same level over the study period.

**Table 4: Economic indicators per capita in the Pomeranian Region provinces**

Indicators	Provinces									
	West-Pomeranian					Pomeranian				
	2002	2005	2010	2005/ 2002	2010/ 2005	2002	2005	2010	2005/ 2002	2010/ 2005
Overall working population (thousand persons)	486,5	483,8	507,6	0,99	1,04	660,7	667,0	744,9	1,01	1,12
Professionally active (thousand persons)	734*	713	664,0	0,97	0,93	862*	856,0	917,0	0,99	1,07
Average gross monthly remuneration (PLN)	2 068	2 308	3120	1,12	1,35	2176	2511	3384	1,15	1,35
Gross added value per 1 working person (thousand PLN)	60,4*	70,7	86,1**	1,17	1,22	59,2*	71,3	88,8**	1,20	1,25
Investment expenditure per capita (thousand PLN)	2,3	2,8	4,9	1,22	1,75	2,8	3,4	5,8	1,21	1,71
Industrial sales per capita (thousand PLN)	9,0	12,6	15,2**	1,40	1,21	14,2	18,9	28,2**	1,33	1,49
GDP per capita (thousand PLN)	20,7*	23,9	30,9**	1,15	1,29	21,1*	25,3	34,3**	1,20	1,36

\*data for 2003; \*\* data for 2009

Source: own study based on data from the Polish Central Statistical Office

These changes did not correspond to the number of working persons. In West-Pomerania this number fell down in 2005 by 1% as compared to 2002, whereas in 2010 a 5% increase was recorded, as compared to 2005. In Pomerania the number of working persons initially decreased by 1% in 2005, to be followed by a 7% increase in 2010. Such dynamics is caused by, i.a., liquidation of large enterprises, as well as creation of working places in newly set up companies.

### 3. APPLIED RESEARCH METHODS

In this study, to present the dynamics of factors affecting the Region's innovation capacity, the following statistical and econometric methods were applied (Nowak 2002, Kukuła 2003):

- absolute increase rates with variable base:  $\Delta y = y_n - y_{n-1}$
- one-base indexes with variable base:  $I_{n/n_0} = \frac{y_n}{y_{n-1}}$ ;

where  $y_n$  – value of the feature over n period;  
 $y_0$  – factor value in the period  $n-1$ ;

- linear trend function:  $y_t = a_0 + a_1 t$   
 estimated using MNK – Least Squares Method and verified on the validity level 0,05.

$$a_1 = \frac{\text{cov}(y, t)}{S_t^2}$$

$$a_0 = \bar{y} - a_1 \bar{t}$$

where:  $a_0$  – regression constant;  $a_1$  – regression coefficient;  $t$  – time variable.

### 4. HUMAN RESOURCES

Human resources constitute one of the indicators reflecting the capacity for innovation and creativity, since individuals are able to take up work related to the creation, development, dissemination and application of knowledge thanks to their education and qualifications (Table 5).

**Table 5: Percentage of population by level of education in the Pomeranian Region in the years 2002 and 2010 (%)**

Territorial unit	Tertiary education			Secondary and post-secondary education		
	2002	2010	2010–2002	2002	2010	2010–2002
Poland	11,2	19,3	8,1	32,6	33,6	1,2
Pomeranian Region	10,9	17,8	6,9	32,9	33,2	1,4
West-Pomerania	10,4	17,1	6,7	32,9	32,7	-0,2
Pomerania	11,3	18,4	7,1	32,9	33,7	1,6

Source: BAEL

In the Pomeranian Region of Poland, in the year 2002 43% of the population completed at least their secondary education (secondary, post-secondary and tertiary). In the period until 2010 the share of people with higher education increased by 7%, and the share of people with secondary and post-secondary education rose by 1.4%. It is easy to gain education and qualifications thanks to numerous higher education institutions (51) operating in the Region.

In the Pomeranian Region, the educational indicators show a reverse trend. In West-Pomerania, in 2010, as compared o 2004 (no data available for 2002), a 17% decline in the number of students per 10 thousand inhabitants was recorded, while at the same time this number rose slightly (by 5%) in Pomerania. In the first province, the amount of students in public schools decreased (by about 25%) and the amount of students in private school increased (by about 6%), to be contrasted with the Pomeranian province where the number of public school goers increased slightly (by 0.4%), and by an astonishing 40% in case of private schools. In Poland, the student ratio per 10 thousand persons was only 32, and the decrease in the overall number of students was observed for both types of schools (Table 6).



**Table 6: Tertiary education students in the Pomeranian Region in the years 2004-2010**

Territorial unit	Public schools (thousand persons)		Non-public schools (thousand persons)		Total per 10 thousand inhabitants	
	2010- 2004	2010/ 2004	2010- 2004	2010/ 2004	2010- 2004	2010/ 2004
Poland	-93,260	0,9299	-2,036	0,9965	-32	0,94
Pomeranian Region						
West-Pomerania	-19,323	0,7445	0,929	1,0639	-84	0,83
Pomerania	0,314	1,0042	9,213	1,3966	23	1,05

Source: own study based on data from the Polish Central Statistical Office

As the correlation coefficient for both provinces was very high, the dynamics of the student ratio per 10 thousand inhabitants could be described by using the linear trend function. For West-Pomerania this correlation is negative (-0,9880), which means that year after year the number of students kept falling by 17, on average, while for Pomerania the correlation was positive (0,9683) and the regression coefficient equal to 5 reflected the annual average increase in the number of students per 10 thousand inhabitants.

Most commonly, universities and college enjoy a greater popularity in regions where graduates can, simply, find jobs. This trend has been confirmed by the analysis of changes in employment in the Pomeranian Region, with focus on enterprise and tertiary education sector, presented in Table 7.

**Table 7: Changes in employment in R&D units in the Pomeranian Region in the years 2005-2010 (in persons)**

Territorial unit	Total		In enterprise sector		In tertiary education sector	
	2010-2005	2010/2005	2010-2005	2010/2005	2010-2005	2010/2005
Poland	6361	1,05	4835	1,27	-2515	0,97
Pomeranian Region	554	1,04	322	1,27	-265	0,96
West-Pomerania	13	1,00	29	1,28	-501	0,86
Pomerania	541	1,08	293	1,26	236	1,05

Source: own study based on data from the Polish Central Statistical Office

The persons employed in R&D are all persons involved in R&D activities, including professional and auxiliary staff. It is considered that employees directly involved in R&D are the ones who devote to this activity at least 10% of their overall working time. Data, subdivided into sectors, are given in FTE. FTE – Full Time Equivalent is a unit of measurement used to determine actual working time in R&D; one FTE means one person-year devoted exclusively to R&D. An essential component of research on creative human resources involved in innovation is the share of employment in R&D activity (creative class).

In the years 2005-2010, there was an average increase of 4% in employment in entities involved in R&D the Pomeranian Region (compared to 5% increase for Poland). Looking at general trends, one may conclude that in West-Pomerania employment remained on the same level; while in Pomerania it escalated by 8%. However, the trend differed in particular sectors. Overall, in the entrepreneurial sector, employment increased by 27% (all-Poland rate was the same), whereas in the tertiary education sector employment diminished by 265 persons. However, there were differences between the provinces: employment in tertiary education sector dropped by 14% in West-Pomerania and rose by 5% in Pomerania.

## 5. ENTREPRENEURIAL FINANCE

There are two main sources of financing enterprises (Bień, 1998): internal and external funds. When choosing the optimal source of finance, an enterprise should consider numerous factors, both endo- and exogenic. The use of external capital is necessary for company's proper, continuous development, as it allows to set and achieve new goals, as well as expand company's activities. However, the relationship between internal and external finances must take into account the company's individual situation, its growth prospects, its innovation policy, competitive business environment, the potential of the output market and many other essential factors accounted for in the company's business strategy. An enterprise should decide on its sources of finance in a logical and rational way, with the emphasis put on the stability of its operations and efficiency of its growth.

One of the purposes of financing is to generate new products, technologies, or product and process innovations, as well as to conduct R&D activity. Polish enterprises spend increasingly more on innovation. According to the 2010 Report by the Polish Agency for Enterprise Development (PARP) in 2008, as compared to 2006, there was an overall 21% increase in expenditure on R&D in Poland, 17% in West-Pomerania and 25% in Pomerania. In the two following years this rising trend was even more dynamic (Table 8).

**Table 8: Expenditure on R&D in the Pomeranian Region in the years 2008-2010 (mln PLN)**

Territorial unit	Total		Including technical and engineering sciences	
	2010-2008	2010/2008	2010-2008	2010/2008
Poland	2 709 935,3	1,35	1 155 012,0	1,3
Pomeranian Region	138 832,6	1,31	-84 029,7	0,8
West-Pomerania	48 619,8	1,39	20 687,5	1,3
Pomerania	90 212,8	1,23	-104 717,2	0,7

Source: own study based on data from the Polish Central Statistical Office

Average increase in total expenditure on R&D in the two-year period, both on the national and regional (Pomerania) scale was very big and amounted to over 30%. In 2008 expenditure on R&D in the Region accounted for 6.8% of overall expenditure invested in R&D in Poland. In 2010 this share decreased by 0.4%. However, what is worth emphasizing, expenditure on technical and engineering sciences accounted for over 42% of the overall increase in expenditure. Other fields of science played a smaller role in that increase, that is 12% medical and health sciences and 7% agricultural sciences. As it comes to the two provinces of the Region expenditure grew dynamically in West-Pomerania, with a 39% increase versus 23% increase in Pomerania. Overall expenditure on technical and engineering sciences in the Region declined by 20%, although in West-Pomerania it rose by 30%. Average R&D expenditure per capita in Poland was 189.1 PLN and this indicator was higher by approx. 42% in the Region. The lowest expenditure and the biggest variation in expenditure were observed in the West-Pomeranian province, that is 62.7 PLN with 33% variation (Table 9).

**Table 9: Expenditure on R&D per 1 inhabitant of the Region in the years 2003-2010**

Territorial unit	M	SE	V	CC	RC
Poland	189,1	47,4	25,1	0,9716	23,0
Pomeranian Region	111,0	26,8	24,2	0,9678	13,0
West-Pomerania	62,7	20,9	33,4	0,9447	9,9
Pomerania	159,4	33,0	20,7	0,9752	16,1

Source: own study based on data from the Polish Central Statistical Office

CC – correlation coefficient, RC – regression coefficient, V – variability coefficient, SE – standard deviation, M – mean value.

There was a linear trend in R&D expenditure per capita with a very strong correlation with time (CC), therefore the regression coefficients (RC) can be interpreted as average yearly increase in expenditure. The average yearly increase in expenditure in the Region constituted 56% of the national increase. The smallest dynamics, almost half the amount invested in Pomerania, was showed by expenditure in West-Pomerania.

Another indicator, which captures changes in financing R&D is expenditure in the three sectors: entrepreneurial, government and tertiary education. Linear trend function was used to analyze overall R&D expenditure and specifically expenditure in entrepreneurial and tertiary education sectors. Such regularity was not identified in the government sector (Table 10).

**Table 10: Expenditure on R&D in the Pomeranian Region in the years 2006-2010 (mln PLN)**

Territorial unit	Total		In the sector of			
			Enterprises		Higher education	
	CC	RC	CC	RC	CC	RC
Poland	0,9709	878,1	0,9771	238,9	0,9911	519,4
Pomeranian Region	0,9698	53,5	0,9676	31,5	0,8469	12,7
West-Pomerania	0,9445	16,7	0,8807	6,4	0,2408	22,3
Pomerania	0,9760	36,8	0,9777	25,1	0,8950	11,1

Source: own study based on data from the Polish Central Statistical Office

CC – correlation coefficient

RC – regression coefficient

On the national scale there was a very strong positive linear correlation between time and expenditure on total R&D activity, as well as in the higher education and entrepreneurial sectors, which is why the linear regression coefficients can be interpreted as average yearly increase in expenditure. Also with respect to the Region and its provinces, with the exception of expenditure in the higher education sector in West-Pomerania, a strong linear correlation could be observed.

In the Pomeranian province the dynamics of overall expenditure was twice as big as in West-Pomerania, and interestingly, four times bigger in the sector of enterprises. In West-Pomerania the linear dependence between expenditure and time occurs only in overall expenditure and in the entrepreneurial sector. For overall R&D expenditure in West-Pomerania the regression coefficient was 16.7 mln PLN, thus over twice smaller than in Pomerania. Similarly, the regression coefficient in the sector of enterprises is four times lower than in the other province that is 6.4 mln PLN. It was not possible to calculate the trend in the higher education sector for lack of fitting models and data validity.

As mentioned before, innovation-focused activities generate significant added value for industry and services and enhance the competitive capacity of an enterprise. Analysis of expenditure on innovation according to the source of finance, plus their structure in service and industrial enterprises has been presented below. All expenditure on product and process innovation (current and capital), regardless of the source of finance, incurred in the reporting year and spent on successfully completed works (that is resulting in implementation of innovation), unfinished (continued) as well as interrupted or abandoned (definition after the Polish Central Statistical Office). In 2005 and 2007, the research covered only industrial enterprises with more than 49 employees – comprehensive survey. In the remaining years the comprehensive survey embraced industrial enterprises with over 49 employees and the survey on a representative sample covered industrial enterprises with 10 to 49 employees, whereas the survey on innovative activities in the service sector was conducted on a representative sample (Table 11).

The structure of expenditure in service sector enterprises in 2006, both in Poland and in the Pomeranian Region, was dominated by enterprises' own resources, accounting for more than 80% of total funds. A similar situation was observed in the Pomeranian province, with approx. 90% of own resources. In West-Pomeranian province, however, the proportion of own resources was about 50%, the second important source of finance being bank loans, making about 30% of total funds. Other sources accounted for 18% of the total enterprise finance.

In 2010, the expenditure structure of the enterprises residing in the Pomeranian Region underwent certain change. Own resources still prevail, but do not exceed 70% of the total resources. More bank loans (approx. 22%) are used, as well as funds acquired abroad (over 7%).

**Table 11: Expenditure on innovation regarding product and process innovations according to the sources of finance in the Pomeranian Region in the years 2006 and 2010**

Territorial unit	Expenditure (thousand PLN)						Structure (%)				
	Overall	Own funds	Budget funds	Funds from abroad	Bank loans	Other	Own funds	Budget funds	Funds from abroad	Bank loans	Other
Service sector enterprises											
2006											
Poland	8 256 051	7 345 486	69 026	88 465	595 387	157 687	88,97	0,84	1,07	7,21	1,91
Pomeranian Region	401 932	343 756	368	2 004	47 526	8 278	85,53	0,09	0,50	11,82	2,06
West-Pomerania	43 652	21 736	333	501	12 823	8 259	49,79	0,76	1,15	29,38	18,92
Pomerania	358 280	322 020	35	1 503	34 703	19	89,88	0,01	0,42	9,69	0,01
2010											
Poland	10 790 284	9 247 613	52 410	268 862	1 129 197	92 202	85,70	0,49	2,49	10,46	0,85
Pomeranian Region	521 020	352 431	8 126	39 604	114 473	6 386	67,64	1,56	7,60	21,97	1,23
West-Pomerania	64 039	37 779	651	12 855	7 130	5 624	58,99	1,02	20,07	11,13	8,78
Pomerania	456 981	314 652	7 475	26 749	107 343	762	68,85	1,64	5,85	23,49	0,17
Industrial enterprises											
2006											
Poland	17 249 325	13 482 211	274 538	363 612	2 587 601	5413 63	78,16	1,59	2,11	15,00	3,14
Pomeranian Region	1 298 962	1 022 608	22 820	22 353	183 415	47 766	78,72	1,76	1,72	14,12	3,68
West-Pomerania	329 861	186 772	6 284	5 846	113 119	17 840	56,62	1,91	1,77	34,29	5,41
Pomerania	969 101	835 836	16 536	16 507	70 296	29 926	86,25	1,71	1,70	7,25	3,09
2010											
Poland	23 757 776	17 874 655	270 708	1 878 952	2 089 657	1 643 804	75,24	1,14	7,91	8,80	6,92
Pomeranian Region	2 439 951	1 381 615	8 224	210 217	816 550	23 345	56,62	0,34	8,62	33,47	0,96
West-Pomerania	530 239	473 794	2 321	18 738	34 056	1 330	89,35	0,44	3,53	6,42	0,25
Pomerania	1 909 712	907 821	5 903	191 479	782 494	22 015	47,54	0,31	10,03	40,97	1,15

Source: own study based on data from the Polish Central Statistical Office

In West-Pomerania the share of own resources grew by 10% in 2010, compared to 2006, the share of loan capital declined by 11% and funds acquired abroad accounted for 20% of total funds (in 2006 only for 1%).

In Pomerania the share of own resources in the expenditure structure in service sector enterprises in 2010 declined by 20% compared to 2006, with bank loans climbing to approx. 23% and funds acquired abroad made for only approx. 6% of the total funds. Budget funds in both provinces had a rather insignificant share, not bigger than 2%.

In the industrial enterprise sector the expenditure structure looked slightly different. In 2006, in Poland and in the subject Region, own resources accounted for 78% of total finance, bank loans – for 15%. Other sources of finance were insignificant, and generated up to 3% of resources. However, this structure was different in the two provinces. In Pomerania, own resources constituted over 86% of the funds, loans – only 7%. In West-Pomerania, it was respectively 56% and 34%.

In 2010, figures for Poland show that own resources make up to over 78% of total finance, with a decline in the share of bank loans (8.8%) and increase in other source of finance (up to 7%). In the Region on the whole, the share of own resources decreased to approx. 57%, with the share of loan capital up to 33%. Funds acquired abroad accounted for about 8% of total funds. In the provinces the situation is just the other way round compared to 2006. In West-Pomerania the share of own resources went up to over 89%, whereas in Pomerania it went down to 47%. In West-Pomerania, loans made up only 6.4% of funds, whereas in the other province – as much as 41%. In case of funds acquired abroad, in West-Pomerania it was merely 3.5% and in Pomerania – 10% of total finance.

Unfortunately, expenditure on R&D in relation to GDP was not high and remained below 1% of GDP (Table 12).

**Table 12: Expenditure on R&D expressed as % of GDP (in current prices)**

	Years					
	2004	2005	2006	2007	2008	2009
Poland	0,56	0,57	0,56	0,57	0,60	0,68
Pomeranian Region	0,70	0,70	0,70	0,80	0,80	0,70
West-Pomerania	0,17	0,17	0,19	0,24	0,24	0,22
Pomerania	0,48	0,52	0,51	0,51	0,57	0,52

Source: own study based on data from the Polish Central Statistical Office

The indicator for West-Pomerania is particularly alarming. In 2004 it was 0.17% GDP, to grow slightly in successive years up to 0.22% of GDP in 2010. In Pomerania, this indicator was also below the country's average, yet decidedly higher than in the other province, that is 0.48% of GDP in 2004 and 0.52% of GDP in 2010. In the study period only the Masovian province spent more than 1% of GDP on R&D.

## 6. INNOVATION CAPACITY OF POLISH ENTERPRISES

The economy's capacity to create and adopt innovation is one of the main factors affecting its competitiveness, especially in the long run. Innovation affects the way enterprises function in a number of ways – resulting in e.g. increased sales revenue, bigger market share market and increased efficiency.

The type and success of innovative activity undertaken by entrepreneurs depends on subject knowledge, technology used, management style, human and financial resources (Przedsiębiorczość w Polsce, 2010, s. 44).

Enterprises which have embarked on innovative activities play an essential role in building innovative economy. In 2010, the percentage of innovative companies in Poland was only 21%, 30% in West-Pomerania and 15% in Pomerania.

The share in R&D expenditure varied depending on the year and province. In 2003 business entities had a merely 4.9% share in overall R&D expenditure and came at the bottom

of the ranking for Poland. In 2010, it increased over threefold and amounted to 18%, thus taking the 11<sup>th</sup> position in the country's ranking. In the Pomeranian province, the share that business entities had in R&D expenditure was significantly bigger and reached 28.5% in 2003, placing the province on the 5<sup>th</sup> position in the country. In 2010, this province moved to the 2<sup>nd</sup> position with 48% of share.

Table 13 provides data on innovative enterprises by type of innovation implemented, that is product or process innovations.

**Table 13: Innovative enterprises in the Pomeranian Region by type of innovation implemented in the years 2005 and 2010 (%)**

Territorial unit	Indicators					
	2010–2006			2010/2006		
	Total	Products	Processes	Total	Products	Processes
Pomeranian Region	-7,09	-4,09	-6,26	0,76	0,83	0,77
West-Pomerania	0,00	0,00	0,00	1,00	1,00	1,00
Pomerania	-14,17	-8,17	-12,52	0,52	0,56	0,48

Source: own study based on data from the Polish Central Statistical Office

In the Pomeranian Region, a 24% drop in the number of units/ entities involved in R&D was observed in 2010, as compared to 2006. These changes took place mostly in the Pomeranian province, as West-Pomerania showed stagnation. The number of enterprises implementing process innovation dropped by about 23% and by about 17% for product innovation. The drop in the number of enterprises implementing innovation did not affect adversely their financial results from sales of innovative or significantly improved goods.

Table 14 presents the share in the production sold of new or significantly improved goods and innovative goods in industrial enterprises in the Pomeranian Region in the years 2006 and 2010.

**Table 14: Share of new or significantly improved and innovative industrial goods in the overall value of sales of goods in the Pomeranian Region of Poland in the years 2006-2010 (%)**

Territorial unit	Goods			
	New or significantly improved		Innovative	
	2006	2010	2006	2010
Poland	17,00	13,91	13,47	11,34
West-Pomerania	9,14	2,93	6,57	2,89
Pomerania	33,50	49,76	25,75	43,40

Source: own study based on data from the Polish Central Statistical Office

The share of new or significantly improved goods in the overall production sold increased in the Pomeranian province up to approx.50% in 2010 (from 33.5% in 2006), whereas in the West-Pomeranian province it dropped to meager 3% (from approx. 9%). The average for Poland in 2010 was 14%. A similar situation could be observed in case of innovative goods. In 2010 the share of these goods in the overall production sold soared to 43% in Pomerania (from approx. 26% in 2006), whereas in West-Pomerania it dropped to 3% (from 6.6%). The share of innovative goods in the production sold for the whole country was over 11% in 2010 and decreased by 2% compared to 2006.

In addition, the revenue generated by sales of innovative products in industrial enterprises being part of the enterprise net revenue is different in the two provinces (Table 15).

The share of revenue from sales of innovative products in overall net sales revenue in 2010 was over 11% for the whole country, and compared to 2006 it was down by more than 2%. What is worth noticing, there was a stark contrast between the two provinces in this respect. In Pomerania, the share of revenue from sales of innovative goods in 2010 was over

43%, increasing by about 68% in comparison to 2006, contrasting strongly with West-Pomerania where a decline from 6.6% to 3% was observed.

**Table 15: The share of revenue from sales of innovative products in overall net sales revenue in Pomeranian Region provinces (%)**

Territorial unit	Indicators			
	2006	2010	2010-2006	2010/2006
Poland	13,47	11,34	-2,13	0,8419
West-Pomerania	6,57	2,89	-3,68	0,4399
Pomerania	25,75	43,40	17,65	1,6854

Source: own study based on data from the Polish Central Statistical Office

As it comes to the revenue from sales of innovative export products, in the years 2006-2010 a regress was observed on the national and regional (Pomeranian Region) scale (Table 16).

**Table 16: Share of net revenue from sales of innovative export products in overall net sales revenue in the two provinces of the Pomeranian Region (%)**

Territorial unit	Indicators			
	2006	2010	2010-2006	2010/2006
Poland	5,25	4,93	-0,32	0,94
West-Pomerania	3,62	1,28	-2,34	0,35
Pomerania	8,05	7,15	-0,90	0,89

Source: own study based on data from the Polish Central Statistical Office

The share of net revenue from sales of innovative products for export in the overall net sales revenue in Poland in 2006 was 5.26%. In 2010 this share decreased slightly (by 6%). With regard to the subject provinces, the biggest decline occurred in West-Pomerania, that is to 1.28% in 2010. On the other hand, in the Pomeranian province in 2006 and 2010 this share was bigger than country's average and dropped to 7%.

## 7. CONCLUSIONS

It can be concluded that the Pomeranian Region is economically well-developed. This is proven by, i.a., its GDP as well as the provincial budgets' revenue and expenses. In 2010 the share of the Pomeranian Region in the country's overall GDP was about 9% and it decreased as compared to 2002 by approx. 1%. The employment rate in both provinces is below 50%, and concurrently, the unemployment rate is very high, though it shows a declining trend.

In the Pomeranian Region the quality of personnel is improving since individuals who completed higher education in 2010 amounted to 17% of the population (increase by 7%). However, in 2010 there was a 10% decline in the number of students as compared to 2004 (decrease by 141 students per 10 thousand inhabitants).

A positive phenomenon worth noticing is the fact that employment in R&D entities is on the rise, in particular in the enterprise sector. Expenditure on R&D is increasing, yet at the same time the number of entities/ companies involved in R&D is in decline, which is a puzzling phenomenon that sure deserves further investigation. A negative phenomenon observed is the level of R&D expenditure expressed as % of GDP, which both in the whole Region and in individual provinces does not exceed 1%, in West-Pomerania amounting merely to 0.22% of GDP.

In 2010 the main source of financing R&D activities were own resources, with bank loans and funds acquired abroad constituting other significant finance sources.

The increase in the revenue from sales of innovative products occurred only in enterprises operating in the Pomeranian province, by approx. 18%. The share of net revenue from sales of innovative export products in overall net sales revenue is decreasing. In the West-Pomeranian province it was as low as 1.28% in 2010.

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## AUTHORS

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The management of SMEs is one of the hottest subjects today. Start-ups and growing ventures represent the future, but leading them is complicated and risky. Businesses need professionally designed and implemented systems and processes to be successful on the long run. Theories and models must be mixed with practical experience; a permanent knowledge transfer is needed between academia and managerial practice. This book with its well researched studies helps us to understand how ventures and their managers behave, how they develop, what they need in different phases of their lifecycle, but it also provides ideas for practitioners about how to become better managers and leaders.

*Prof. Dr. György Bögel*  
*Professor of Management, CEU Business School,*  
*Budapest, Hungary*

I consider the book “SMEs’ Management in the 21st Century – Challenges and Solutions” as a very useful source of latest findings in the field of management, business strategy, and human resources development. Especially, volatile markets nowadays require strategies and business management able to ensure the competitiveness of medium and small units. From this point of view, the publication accounts a value added for both academics and applied business studies and realities. Moreover, it brings results, case studies and experiences from different V4 countries and other regions, so important in current globalized and inter-connected world.

*Prof. Dr. Ing. Elena Horska*  
*Department of Marketing, Faculty of Economics and Management*  
*Vice-rector of Slovak University of Agriculture in Nitra, Slovak Republic*

The book SMEs’ Management in the 21st Century – Challenges and Solutions is a valuable source of knowledge on modern management of Small and Medium Enterprise. It is very important issue particularly in Central and Eastern Europe where small entrepreneurship was destroyed under communism. Now when free market economy was restored big companies have their own infrastructure (legal, financial, etc.) which helps them to operate in dynamic environment. In presented book, reader may find many interesting theoretical and empirical analysis, which can be useful for both scholars and practitioners as well. Many authors from different countries also from outside the European Union like Turkey or Russia deliver big diversity of data and concepts focused on operation of Small and Medium Enterprises. That is why this book is worth to recommend for everybody who is interested in this subject in research, management, and education.

*Leszek Cichobłaziński, PhD*  
*Vice Director of Institute of Sociology and Psychology of Management*  
*Faculty of Management, Częstochowa University of Technology,*  
*Częstochowa, Poland*