

Contemporary
Challenges
towards Management
III

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Contemporary Challenges towards Management III



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Contemporary Challenges towards Management III

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Introduction

The modern world remains a major source of turbulence in the close and distant environment of functioning organization. It is also in a strong correlation with the individual areas, functions and entire organizations. High turbulence not only affects classic organizations, but also organizations that function in virtual space. Occurring changes in the environment pose new challenges for the management process of organizations. There are new issues, areas, components of the management process and there is redefinition of the previous terms. Huge impact on this hypothesis is the result of:

- technical and technological progress, in particular progress in tele-information technologies;
- increasing availability of the Internet and broader bandwidth of it;
- cultural factors in the functioning of an organization;
- increasing importance of intangible assets in the structure of value (asset structure) of an organization;
- defining new organization structure based on outsourcing.

Particularly the adoption of the concept of outsourcing strongly determines the construction of the new organization and functioning of existing organizations nowadays, both “classic” and operating in the virtual space. In this determining context, the definition of outsourcing is contracting out of certain functions and areas of the organization’s environment, but also as the use of environmental resources, both in the present and in the future. Such concepts as outsourcing, Business Process Outsourcing, Knowledge Process Outsourcing and Management Process Outsourcing, show the contemporary development of organization. These concepts of outsourcing with an enormous share in the structure of all types of outsourcing are those that determine the possibility of addressing current challenges to the process of managing organizations. There is an important aspect associated with the use of outsourcing, i.e. increased innovative behaviour, reducing the risk of functioning and increasing the compet-

itiveness of individual organizations. This aspect is of major importance for the small and medium-sized enterprises, and taking into account its importance for the economies of individual countries, it remains one of the most significant phenomena in the management of modern organizations.

Another problem is the problem of conflict in the formation of certain methods, concepts in the function of individual organizations. It is connected with definable contradictions, on the one hand between quality assurance systems, information systems, expert systems, systems of created functions of organization and its members arising from corporate governance, planned career paths and other workers, etc., on the other hand, on creating innovative, creative behaviours of employees and the entire organization (improving systems, e.g. Kaizen method, management by objectives, incentive systems built on the creativity of individuals and others). This area in the functioning of an organization is very difficult to reconcile and requires a redefinition of the functioning and structure of modern organizations.

Another issue in the management of organizations is its effectiveness, including in particular the mapping of processes and in this context, defining metrics and indicators to assess the process. At the moment, we can observe two trends: first, a very complex one (detailed description of the defined processes or functions), and second, a tendency to an overall (holistic) assessment of the effectiveness of the organization. On the one hand, we build systems for very specific metrics indicators (early warning systems for organizations) of the other building assessment systems based on indicators of comprehensive, e.g. EVA which have many processes in its structure. It is a big challenge to define metrics for the assessment and mapping processes in classic and contemporary organizations operating in the virtual space, taking into account i.a. the use of outsourcing.

Great challenge to the management process of modern organizations is the issue of intangible assets, called by some scholars – the intellectual capital of organization. The organizations create much more intangible fixed assets (with a growing involvement in the asset structure). It provides the opportunity to develop (generates innovation in the behaviour of an organization) but at the same time, it expands conditions of uncertainty by the greater amount of interaction with the environment. The following defined challenges of contemporary organizations depict many new areas of research that should be redefined or defined once again.

Joachim Foltys

Part One

The Face of Multicultural Organization

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Matej Bel University, Banská Bystrica, Slovak Republic

Cultural intelligence as a learning capability for corporate leadership and management

Abstract: A modern corporation can hardly do without effective leadership and management in a global competition. Cultural intelligence (CQ) as a new phenomenon represents a great potential for a learning organization, and a great further step in the company's development. Corporate leaders who are capable of understanding a multicultural environment, are able to function in it and perform their managerial skills effectively, are a valuable asset for an organization and should be viewed as a competitive advantage of the particular company. However, training managers in intercultural awareness as well as building their intercultural competence is not necessarily a priority for small and medium-sized enterprises in Slovakia. This paper analyses the situation in building intercultural awareness of employees of Slovak SMEs and suggests that enhancing the cultural intelligence of leaders and management provides a platform for further development of a learning organization.

Key words: cultural intelligence (CQ), intercultural awareness, intercultural competence, learning organization

JEL code: M14

1. Introduction

In a modern business, leadership plays an extremely important role. Its functions, as well as the form which leadership takes in a company, largely depend on the company's size and stage of development. In case of start-ups, it can be said, not very much thought is given to a leadership in the literal sense of the word, as starting up a business is more about involvement in rolling up the sleeves and getting things done. For small and medium-sized enterprises (SMEs) this represents an active participation of managers in directing the

company and the employees, as well as establishing the objectives and clear vision for the employees. In large companies, the active role of managers in the day-to-day managing of the operations in the company is less important than in smaller organizations; it is more leadership, role and determining the strategy to be followed and setting general company goals to be achieved. However, in nowadays globalized word, a modern business cannot do without effective leadership and management. To determine who is effective as a business leader many factors must be taken into consideration. One of them is undoubtedly the intercultural aspect of doing business.

A lot has been said and written about the importance of intercultural awareness within the new, globalized world and business. The today's world seems to be much smaller than ever before, which is caused by people travelling for business and pleasure, or settling down in different parts of the world in search for better job or life. Not only in everyday life, but also, and very importantly, in business, people are increasingly communicating and interacting with partners of different cultures. In business world, ignorance of other cultures can lead to intercultural misunderstandings, cultural clashes and can have serious negative consequences for a company.

Already at the level of higher business education, the field of intercultural communication has been given substantial importance. Many Slovak economic universities and schools of higher economic/business education have developed and introduced courses of intercultural communication, international business etiquette, cultural awareness, or other courses related to this field, e.g. the University of Economics in Bratislava, Philological Faculty of Comenius University in Bratislava, Matej Bel University in Banská Bystrica, etc., have established specialized programs training students – future entrepreneurs and managers of multinational companies – in intercultural relations and communication. The main focus is to prepare them to successfully function in a foreign or intercultural environment. Apart from university education, Slovak educational market offers numerous training courses for company managers and employees, where courses related to cultural awareness and intercultural communication represent a decent share. Business organizations can choose the type of training which suits the company's management and employees best to achieve their main objectives. Further in our article we suggest that the concept of a learning organization should be enhanced by intercultural training as an indispensable part of knowledge management of such companies. Relatively new concept of cultural intelligence (CQ), if applied in learning organizations, might help companies build up on already developed knowledge and enlarge it to help them successfully compete within the globalized international market.

2. Learning organization in international environment

Organization actively seeking ways of developing its human resources as well as technologies is a learning organization. Pedler, Burgoyne and Boydell (1996) have defined the concept of a learning organization as “an organization that facilitates the learning of all its members and continuously transforms itself.” The key to knowledge management, as a fundamental element of a learning organization, is to coordinate people, processes and technologies. This is much easier to facilitate inside a mono-cultural environment, rather than a multicultural one, taking into consideration all three mentioned aspects, but mainly the human factor. Tomas, Hult and Ferrell (1997) suggest a model of a “global learning organization” structure while their study focuses on the relationships between the domestic and international business units and the buying center. They come to a conclusion that a learning organization, as opposed to a regular business, appears to be strong in challenges represented by both domestic and international settings. Learning organization, according to Olivier Serrat, is composed of 4 main subsystems which are: organization, employees, knowledge and technologies. Each of these pillars influences the whole system and thus contributes to building of a learning organization (Serrat 2009). Let us concentrate on knowledge as one of the 4 main pillars and look at a learning organization from the intercultural perspective.

Knowledge in a company challenged by international settings – intercultural knowledge and competence – can be defined as “a set of cognitive, affective, and behavioural skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts” (Benett 2008). Mešková (2011) states that flexibility, proactive approach and dynamics belong to the most important qualities of managers. Various authors have defined intercultural competences differently. Currently the US Army Research Institute is studying the intercultural competence and defines it as a set of cognitive, behavioural and affective/motivational components that enable individuals to adapt effectively in intercultural environments (Abbe, Gulick and Herman 2007). This concept comprises all aspects of a newly introduced phenomenon of a cultural intelligence, as coined and defined by Christopher Earley and Soon Ang.

3. Cultural intelligence (CQ) as a phenomenon

Cultural intelligence (CQ) was first defined only a few years ago by Earley and Ang (2003) as “a person’s capability to function effectively in situations char-

acterized by cultural diversity.” Christopher Earley and Elaine Mosakowski (2004) later on described cultural intelligence in October 2004 issue of *Harvard Business Review* and since then cultural intelligence has been gaining popularity throughout the business world. David Livermore suggests that having a high IQ or EQ is not enough in today’s global and multicultural business environment. Through the concept of cultural intelligence (CQ) he shows a different way to approach the challenges and opportunities in today’s global economy (Benčíková 2011).

Cultural intelligence teaches strategies to improve cultural perception and enables people to distinguish behaviours driven by culture. Theory of cultural intelligence suggests that if we allow the knowledge and appreciation of the differences to guide our responses, it will results in better business practice.

CQ is developed within three different levels:

- through cognitive means,
- through physical means, and
- through motivational means.

The cognitive component of the CQ is the head. It suggests that through learning about one’s own and other cultures, and by acquiring information about intercultural issues, one can increase the cognitive understanding as a basis for functioning in an intercultural environment. For a learning organization in multicultural environment cognitive knowledge would be observable within negotiation processes with international partners, or in general, within big multinational companies, the number of which is significantly increasing in the European market. The second component of the CQ is physical. How the business person is able to use the body language to mingle with the people representing intercultural environment, and how much he or she is able to physically adjust to it, is of no less importance that his or her knowledge and awareness of the cultural differences. The third component of the CQ is motivation. It is largely important to possess high level of internal motivation to adapt to perform and adjust successfully in a foreign or intercultural environment (Benčíková 2010).

All three components of cultural intelligence, with the emphasis on the cognitive means, should represent a substantial part of the knowledge pillar in a learning organization which wants to successfully operate in intercultural environments. As it can be seen in Figure 1, a learning organization is formed by 4 main pillars, knowledge being one of them. An organization functions and operates in a certain political and economic environment and is also very much influenced by other external factors, such as the society in which it operates as well as technology. When a company is challenged by intercultural environment, all four pillars are affected and need to be adapted to suit new conditions. However, if the company makes an effort in improving the knowledge, in this case knowledge of cultural competence, it will have a positive impact on the other three.

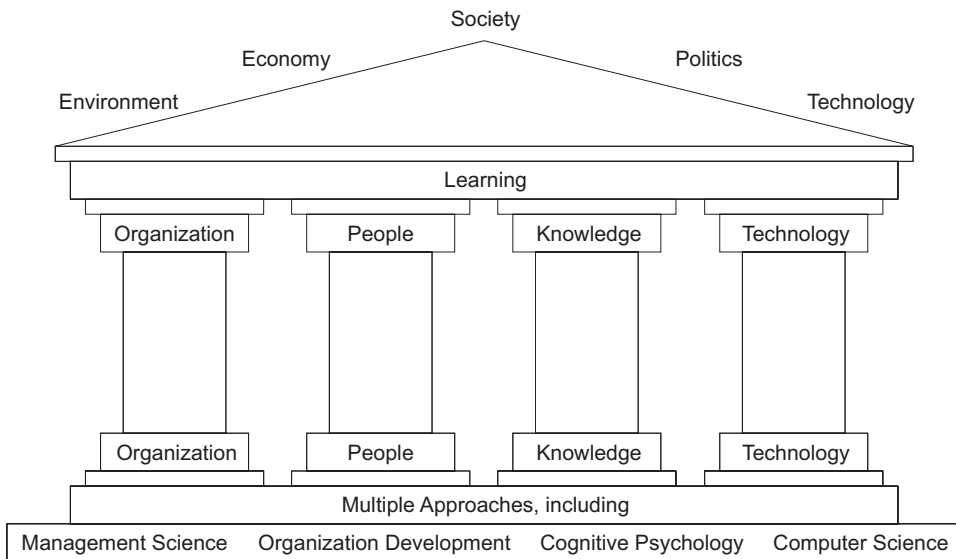


Figure 1. Learning organization pillars

Measuring cultural intelligence quantitatively might be a way of finding out the level of the company's intercultural competences and possibly evaluating its potential success in an intercultural environment. Can the CQ of a company be measured and can it be improved by training? To answer this question we have looked into an extensive research on cultural intelligence conducted by the Cultural Intelligence Center (CIC) at the Michigan State University (<http://www.culturalq.com/index.html>). They propose several ways of how to measure the CQ: the self-assessment of our CQ abilities (<http://culturalq.com/selfassess.html>) as a first step of becoming self-aware of our level of perception and adaptability in an intercultural setting; and the 20-item, four-factor CQ scale (<http://www.linnvandyne.com/shortmeasure.html>) which evaluates the cultural intelligence and is expressed as the cultural quotient.

The four areas in which the CQ can be manifested are the CQ strategy, CQ knowledge, CQ drive (motivation) and CQ action (manifested behaviours). The term CQ strategy describes how an individual is able to make sense of intercultural experiences and is at the metacognitive level, which means that it is based on being aware and conscious of cultural knowledge and adapting to it rather than knowing the other cultures, and therefore it cannot be directly and measurably influenced and enhanced by intercultural training. The CQ knowledge is an individual's understanding of how cultures are similar and how they are different. It reflects general knowledge about cultures, their values and norms, economic and legal systems, religious beliefs and the language. This is a cognitive component of cultural intelligence and can be affected and devel-

oped by intercultural training. The CQ drive represents a person's motivation in experiencing other cultures and interacting with people from different cultures. It cannot be trained or directly influenced but through training, experience and learning the individual gains more confidence which may lead to enhancement of the internal motivation. The last component of the cultural intelligence is the CQ action or the CQ behaviour which is an individual's capability to adapt their verbal and nonverbal behaviour so it is appropriate for interaction with other cultures. Behaviour and ability to adapt it to a new conditions might be coordinated through practical training and enhanced by awareness and knowledge of other cultures.

4. How can businesses benefit from CQ?

Knowledge of one's cultural intelligence can provide business leaders the insight about their own, as well as their company's capabilities to cope with intercultural situations. It also enables them to engage in intercultural interactions in an appropriate way, as well as perform effectively in culturally diverse environments. There is no doubt that this is extremely beneficial in business environment. Business people with higher CQ are regarded as better able to successfully blend in to any environment, using more effective business practices than those with a lower CQ. For Slovak SMEs, this undoubtedly means a great benefit, especially if a business operates on an international level. The other use can be seen in managing multinational businesses effectively.

The relevance of being aware of our cultural intelligence is obvious. To make the measurements available to those business leaders who might find its potential useful, the next step would be to find solutions to help educate those individuals, or companies, whose CQ can be developed further and who will show interest in intercultural communication training. In the following sections we analyse the situation of educating Slovak managers and corporate leaders, while in their education programs and training, offered by different Slovak educational companies, intercultural awareness and intercultural communication is included as a specialized course for corporate managers and leaders.

5. Research on educating and training business leaders in Slovakia

There are various educational and training methods used as education or training programs and offered to individual companies in Slovakia. Generally, these methods can be divided into cognitive and behavioural. Cognitive methods are offering more theoretical training to the trainees, they provide knowledge and information about how to do something, demonstrate concepts from the theoretical point of view through written and oral verbal communication. Examples of cognitive methods are lectures, demonstrations, discussions and computer-based training, e.g. a video conference (Krešáková 2009). Behavioural methods give trainees more practical training and therefore are suitable for skills development. Most common behavioural methods are case studies, simulations and games (e.g. role plays).

In Slovakia there are many specialized companies who offer training and further education to Slovak businesses. Their main target are managers; other target trainees are assistants and other company employees. These educational companies provide a great number of types of education and trainings to target customers, e.g. soft and hard management skills, languages (mainly English), effective communication, computers skills, financial and accounting skills, etc.

6. Methodology of the research

Our research represents a pilot research to project VEGA No. 1/0781/11 “Culturally Intelligent Organization” as the next level of “Learning Organization.” By means of secondary research we have mapped the offer of training courses for managers of small and medium-sized enterprises in Slovakia, with the focus on intercultural awareness and communication. The reason why we have decided to research into the offer of Slovak educational companies is that we assume that without the substantial demand for specialized courses by Slovak businesses there is no offer of such kind. For our research we have chosen 57 educational companies as the research subject, which provide various types of improvement courses as well as training programs (object of the research) to Slovak businesses. We randomly chose several companies in each of the 8 regions in Slovakia and searched into the courses and training programs they offer. What follows are the numbers of companies in individual regions in the Slovak Republic that were subject to our research:

Banská Bystrica region (BB) – 10 companies

Bratislava region (BA) – 10 companies

Košice region (KE) – 6 companies
Nitra region (NR) – 6 companies
Prešov region (PO) – 4 companies
Trenčín region (TN) – 7 companies
Trnava region (TT) – 8 companies
Žilina region (ZA) – 6 companies

The number of chosen companies depended on the availability of data which we searched for within the month of May 2011 as a secondary online research. With regard to the previously discussed cultural intelligence, as an extension to the knowledge pillar of the learning organization our main aim was to find out how much training is given to Slovak businesses (particularly managers of SMEs) in the field of intercultural communication, both from the cognitive as well as behavioural aspect. Companies we have searched into are all educational companies which specialize in training managers, assistants and other employees by offering training courses to Slovak companies with the aim of helping these businesses to improve and develop further in various areas. Only 14% of the analysed educational companies also offer parallel courses to general public, while it is mostly foreign languages or improvement of PC skills.

To simplify the analysis of the collected data we divided the offered courses and trainings into the following categories:

1. Foreign language or communication in a foreign language courses.
2. Improvement of computer skills.
3. Communication courses (comprising topics related to social or diplomatic protocol, company culture and effective communication skills).
4. Management courses (improvement of both soft and hard management skills).
5. Marketing courses (sales techniques, effective presentation of products, etc.).
6. Financial courses (auditing and other financial topics).
7. Intercultural awareness and intercultural communication courses.

7. Results of the research and discussion

Each company that offers one of these seven categories of courses was given 1 point for each represented category. If the course or training is not offered, this category was left with 0 points. The number of points was added up within each category and region, and percentage was calculated. To draw conclusions we analysed the total numbers for Slovakia rather than individual regions, mainly because of insufficient number of companies (4–6) in four of the eight

Slovak regions. Total number of 57 Slovak educational companies is adequate to make conclusions and recommend improvements. Table 1 shows the allocation of courses within each region and the total numbers of offered course in each category.

Table 1. Number and types of courses offered in eight Slovak regions

Region of Slovakia	Type of course offered by an educational company							Total
	language skills	PC skills	communication skills	management skills	marketing skills	finance	intercultural awareness	
BB	3	2	8	10	7	1	1	10
BA	3	1	10	10	9	1	1	10
ZA	1	2	4	6	2	2	0	6
NR	0	1	5	6	2	0	1	6
TN	0	3	7	7	5	4	0	7
TT	1	1	6	8	7	1	1	8
KE	0	0	5	6	5	2	0	6
PO	2	1	4	4	3	1	1	4
Total	10	11	49	57	40	12	5	57

Source: own research and calculations.

As it can be seen in Table 1, there are considerable differences between the category of educational courses and training activities offered by companies. The largest portion is represented by management courses which are provided in each company (100%). This type of courses comprises development of managerial skills, both hard and soft ones, however the soft skills, undoubtedly, play a lead. Some examples of these might be planning, managing, motivating employees, teambuilding, time management, conflict solving, etc. We can see that the courses which develop or improve the managerial and leading skills are extremely popular among Slovak SMEs which are the main target for these educational companies. Second place is taken by communication courses. As much as 86% of educational companies offer courses helping to improve communication within and outside the company as well as communication skills of individuals, mainly middle-level and top-level managers (company leaders). Communication courses include effective communication, communication skills and techniques, emotional intelligence, etc. We have also taken into account business etiquette and protocol in this category as we believe that awareness and mastering correct business manners and business protocol helps communicate the message and represents the company as a whole. The third largest percentage (70%) is represented by companies offering marketing courses to Slovak SMEs. Within the marketing courses we have included sales techniques, selling and negotiation skills, presentations of products, etc. Figure 2 enables

us to see the vast differences between the number of courses offered in each of the seven categories.

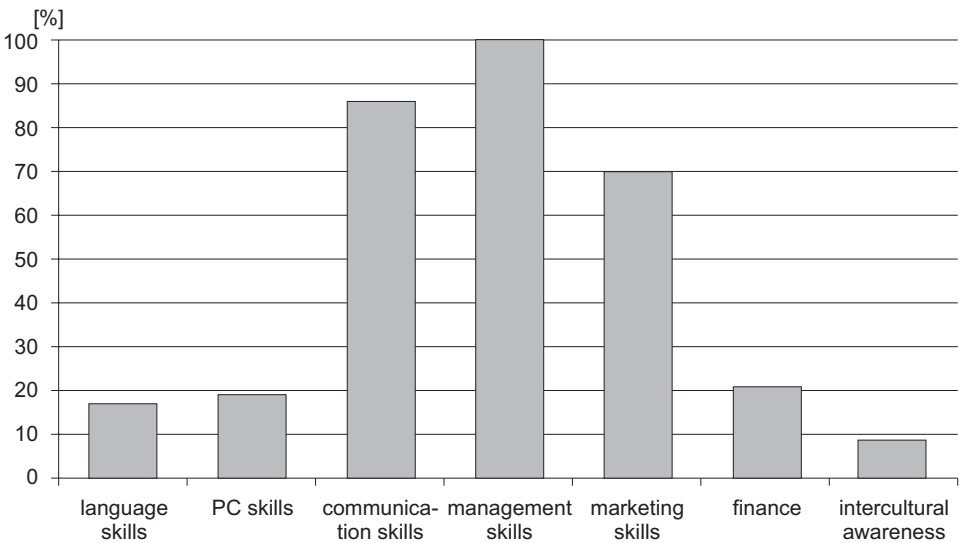


Figure 2. Types of courses offered by educational companies in Slovakia
Source: own research and calculations.

Our research found out that educational courses or training activities which develop and improve language skills (offered by 17% of educational companies), computer skills (offered by 19%) and provide guidance to managing finances in a company are not playing an important role in the educational companies' offer. It can be caused by the fact that foreign languages are taught directly by language schools and provided as language training for the company or individually, at the language schools. There is a large number of language schools which have specialized programs in teaching corporate clients, there are courses of business foreign languages or communication skills in a foreign language such as negotiation, persuasion, argumentation, discussion, brainstorming techniques, etc. As to improvement of computer skills, it is obvious from our research that there is no emphasis on their development. The reason might be the fact that companies hire specialists who provide IT service for them and on the other hand, already at the employee hiring process, candidates come well equipped with substantial user skills and therefore this need for further development is not so obvious. We assume that managing finance (courses offered by 21% of educational companies) of a company is considered to be knowledge which does not directly concern management and leadership skills and therefore is not a primary development aim for managers of SMEs.

Our main aim was to find out if companies pay attention to intercultural awareness and communication. As it was already suggested above, intercultural

knowledge and skills represent building material of the knowledge pillar of a learning organization. Slovak small and medium businesses do not only operate on the Slovak market. Many of these companies opened to the European market (and other markets) and to maintain their position it is inevitable for them to develop a certain standard level of intercultural competitiveness, which can be done through intercultural training.

We were surprised to find out that only 5 (out of total number of 57) educational companies offer courses related to intercultural awareness and communication; this represents 8.7% of companies we researched. By looking inside the individual syllabuses of all 5 courses we found out that, unfortunately, very little information concerning developing the cultural awareness is given to trainees. Mostly the courses aim at general knowledge of other cultures, their habits and traditions, as well as examples of business practices. Only in 2 of the 5 companies (3.5% of total number of 57 companies) we have found training in intercultural communication, both verbal and non-verbal, as well as in understanding of cultural differences, culture shock and developing cultural awareness. These 2 companies provide true intercultural training for company managers, sales people and, potentially, other employees, where the trainees are able to understand the reasons for cultural differences, analyse cultural clashes and solve critical incidents, learn about dangers of national stereotypes and prejudice and practice real-life intercultural negotiations. It may be said that with regard to the previously defined cultural intelligence components these companies provide both cultural knowledge as a cognitive component of CQ and practical training as the behavioural component and are using potentials of both cognitive and behavioural training methods. Surprisingly for us, these 2 companies are located in Banská Bystrica (company Timan, s.r.o.) and Prešov (Wasabi). We would assume that businesses located nearby the Slovak borders (e.g. in Bratislava or Žilina) would create higher demand for intercultural training, due to their closeness to foreign markets, better possibility of communication with foreign partners – corporate leaders and managers, as well as already existing multinational companies in these regions where the intercultural awareness and knowledge appear to be an indispensable part of leadership skills. However, in Bratislava region we have found only 1 company (A.M. Consulting) which provides intercultural training, and that is narrowed down to one discussed topic as a part of training of managerial skills. In Žilina region, we did not find any traces of intercultural communication or awareness topics within the offered educational courses and training programs.

8. Conclusions

The results of our research show that intercultural issues do not seem to play a very important role in education of corporate leaders and managers. It is obvious that with no demand there is no supply and therefore we may state that the educational companies do not focus their education activities and training programs on culture-oriented topics. Slovak businesses, if opening to foreign markets or anyhow operating on an international level, should focus more on training their employees in intercultural issues and create more demand for education activities and training programs in this area.

We think that these conclusions are very important for our further research within the mentioned project VEGA No. 1/0781/11 in which we focus our attention on small and medium-sized enterprises in Slovakia and their interest in intercultural issues and training of managers or employees in this area.

The relevance of the discussed topic of cultural intelligence and applications of intercultural training can be observed in many business situations. Who then, can benefit from knowing their cultural quotient level and subsequent intercultural training? The answer is: mainly business professionals, managers and corporate leaders with international contacts, as well as managers – global leaders who provide leadership in multinational teams or groups of their employees. They are the ones who must take advantage of their intercultural competencies over competitors with lower level of CQ. Thus, the cultural intelligence measuring might open up new horizons for businesses in finding out where their competitive advantage lies within the frame of the knowledge economy. It will enable management of small and medium-sized enterprises to realize and further develop their intercultural skills through various educational activities which the companies will demand from specialized educational institutions.

Economic life is firmly constituted in social rules of a country and therefore the transition to knowledge economy undoubtedly requires changes in how the businesses in a society are functioning. A company which operates in a knowledge society actively invests in development of personal potential of each individual employee by means of supporting their education and searches for the most suitable and modern forms and types of educational activities and training programs. This helps companies to improve their capacity for innovation.

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The multicultural teams and their managing – the new element in strategic partnership with foreign investors

Abstract: The contribution deals with multicultural teams. This kind of teams was created as the new element in the management of joint-stock company after entering of foreign strategic partners. The contribution goes out from original sociological research in several joint-stock companies in Slovakia. In the first part it describes the strategic partnership as an important moment for creation of multicultural teams and in the second part it turns the attention on managing this kind of specific working groups.

Key words: foreign strategic partnership, managing multicultural teams, transformation

JEL codes: F230, J210, M140

1. Introduction

Retrospective view on development in Central and Eastern Europe shows that societies in these countries went through complicated development in relatively short time. Sociologists classify these events as large and complex social process and they call it transition. Its essence is a fundamental and profound transformation of society that affects all its parts. This change is the transition from one socio-economic system to another one which is totally different. The original socialist society based on the government of one political party, its ideology and power, influenced all segments of society and the people's lives, changed in transition and got a new look. The changes have created a basis for a multiparty democratic political system, central government planning came to

an end, conditions for a market economy were created, private ownership prevailed, both domestic and foreign markets were liberalized. A new phenomenon entered into the company – the market and the competition. The transformation of society was significantly affected and dynamized by the continuous expansion of economic, social, cultural and political interconnection of individual parts of the world – globalization. The effort of the internal forces of the society to change the circumstances was supported by the external – international environment which put political and economic pressure on the transition countries. Moving force of the fundamental changes has been and still is modernization. Modernization is considered by Keller (2007: 21) as being

[...] relatively uniform, linear and irreversible process. Its basis is the value transformation, the process penetrates all functionally differentiated subsystems starting with the subsystem of the economics and politics. It is an endogenous process which means that the whole society changes from the inside, even though it was due to a stimuli coming from the imported value orientations. It is assumed that changes in the economics in principle economic growth will lead to parallel changes in the area of politics and will elevate the overall culture of the society.

We bring both processes to attention because they are the framework for the interpretation of changes in post-socialist societies, and for a deeper understanding of society transition. Transition meant fundamental changes not only in politics and economy, but also changed the remaining parts of the society. The entire organization and management of society as well as individual sectors got a new shape. Changes came also in legislation, culture, health care, and in the social sphere. We were interested in microenvironment. We focused our attention on the changes that occurred in the activities of enterprises and we looked for answer to a broad question: What new the transformation has brought to the business environment and what has changed in the working groups and their management?

2. Methods and procedures

The concept of solutions issued from several pieces of knowledge: in transformation of post-socialist societies the priority attention is given to macroeconomic aspects; there is only few information about changes in internal and noneconomic parts of a company – these questions are considered by companies their internal matter and they are restricted to the external research. There-

fore, we chose the methodology of qualitative research by means of case studies. The starting point was the theoretical concept of joint ventures and strategic partnership as a part of the transformation of companies and, ultimately, also the concept of a working group and a team. We attempt at supplementing both concepts with an international and multicultural aspect. We obtained the primary source material for case studies in the form of semi-structured qualitative interviews with Slovak and foreign managers in the companies with German and French capital participation in 2009/2010. The second type of information collection was a direct observation of working groups and teams and managed interviews with members of these groups. The official and internal documents of the companies were the third source of the empirical material.

Our research showed that the case study is a proper procedure in a situation where the theoretical work in progress is in Slovak conditions quite slow, where there is a relatively small number of companies creating enterprises together with foreign investors and where the willingness to cooperate is low. Although our research was not focused only on issues of multicultural teams and their management, international strategic partnership and its influence on internal environment of companies was very strong and created circumstances which enabled the examination of this issue. Because the results and case studies go beyond this paper, we present only part of it. Ethical obligation prevents us from disclosing the names of companies.

3. Strategic partnership – formation and consequences

Joint venture represents the effort of several business subjects to cope jointly and successfully with new conditions in the economy. The essence of a joint venture rests in utilizing the so-called complementary effect. According to it the weak sides of one partner should be replaced, supplemented or compensated by strong sides of the other partner. In a joint venture there is also taken advantage of another principle – the synergistic effect. It is a way when the overall improvement is achieved by linking and multiplying the efforts of several partners. An important concept and basis for a joint venture is partnership. Partnership is characterized by Pitra (1998: 93) as “a relationship of common risk-sharing, success, rewards (profits) and power position. In a real partnership the two-subjects connection takes place in order to achieve goals which would be unattainable for each of them separately.” Business partnership is a special inter-organization relationship. Strategic partnership is a situation where specific resources and company skills are linked to cooperate to achieve common

goals as well as the goals of individual partners. According to Vodáček and Vodáčková (2002) and Smolková (2005) the forms of joint venture can be divided into:

- a. Free forms of joint venture. It is the occasional cooperation or “silent” informal joint venture agreements which are generally concluded orally, they are neither clear nor have enforceable obligations. Economic links between partners are relatively small.
- b. Strategic alliances in the narrower sense, which are anchored in a written contract that defines the field, time and ways of cooperation and solving of the conflict situations.
- c. Joint venture. In these forms of joint enterprising the partners are required to have their own organizational form, the relationship is closer, the conditions are more precise and concluded in a written form.
- d. Tight or solid form of joint enterprising. They are known as a merger of two or more originally separated units or fusions or acquisitions which denote the purchase, acquisition or absorption of the company by the other one. In the companies in which we conducted our research the foreign strategic investor entered via international competition and by purchasing the shares.

Many authors, e.g. Soulsby and Clark (2006), Pitra (1998), Vodáček and Vodáčková (2002), considered joint venture an appropriate way which allows the transforming companies to improve their business, competitive position and economic prosperity. The post-socialist companies decided for strategic partnership upon several reasons: lack of resources (financial, human, information, technical), as the case may be, the possibility to obtain them easier and to use them better, gaining valuable experiences with the functioning in the market environment, management improvement, innovation of technologies, gaining the modern know-how, strengthening the financial and market position, gaining a better image and brand, improvement of cooperation at the international level, help by improvement of the qualification and occupational structure and the opportunity to use the partner's network of contacts and good relations.

Transition of Czechoslovak society began by macrosocial changes in the political sphere at first. After these changes the macroeconomic ones followed with moderate delay. They influenced quickly the microenvironment, i.e. companies and organizations. The extent and depth of changes in the enterprise environment are considered important indicators of the transformation of the whole society. It is understandable because the economics (efficient and prosperous enterprises) is one of the most important pillars and the prerequisites of the society. The evolution of events in our enterprises was not identical. The transformation of enterprises had different pace and trajectory and it divided the enterprises into several groups. The first group consisted of companies that did not change fundamentally. They waited for state support and help after

the transformation too. Because they did not get state support they ceased their activity. Another group consisted of companies which did not rely on state assistance but accepted new conditions as a challenge. They continued in their activities under changed conditions and their common feature was the fact that they made an effort to transform themselves without foreign aid, i.e. by their own funds and means. This meant in practice to mobilize all resources and involve them into changes. This approach to transformation did not bring the desired effect in many enterprises. It appeared that maximal effort and commitment of the employees in company was not sufficient. As a rule, the greatest problem was the lack of own funds that were needed to upgrade production technology. The major obstacle was the the lack of managers and absence of managerial experiences in the market environment, a thorough understanding and application of entirely different economic principles. The speed of transformation was slowed down by the lack of knowledge. It was globalization that helped to solve the problem, as the case may be the changes in international business. The solution meant to cross the company borders and to enter into cooperation with partners who had what the enterprise needed in transformation. Companies did not enter into cooperation easily. As the potential partners did not want to cooperate with the state enterprises, the transformation process continued by the privatization of state enterprises. After the successful privatization the enterprises – now joint stock companies – could develop cooperation. They became partners of advanced foreign companies. As a rule, they were large western companies that operated in the same or related brand and were interested in expanding their business into Central Europe. The topical term during transformation was joint venture with foreign investor, or as the case may be – the strategic partnership.

4. Teams and multiculturalism

The groups and teams are the subject of several social sciences. They systematize existing knowledge and uncover new insights into situations where more people live and cooperate together. The groups and teams are very topical in the work and business environment. We can say that the variety of stimuli and questions comes from this sphere. It is caused by changing times and consequently, the tasks and ways as well as forms of cooperation are changed. Challenges brought by the contemporary world of work and business are more complex, broader, interdisciplinary, they are rarely clearly structured and unambiguous, they are harder to systematize, higher quality is required and there is less time for their solution. The important and difficult tasks are solved

by teams created in successful companies. These companies confirm that team-work is more effective, better and cheaper. But it must be done professionally and with suitable people.

Group and team are very close concepts. Sociologists consider team as a specific type of working group. Psychologists Hartl and Hartlová (2000: 653) characterize it as “an informal group connected by effort to achieve the estimated objective.” According to Bedrnová and Nový (1998) team is a small group (unstructured in formal and internal way) of people who are working within the group for a certain time on a common agenda. Katzenbach and Smith (1993) explain team as a small group of people with complementary skills and roles who are committed to common purpose, work goals and approach to work, and they are mutually responsible. Urban (2003: 194) considers team as “a small group of people with complementary skills and abilities who by common action and by means of clearly defined tasks are aimed at goal fulfillment and they share responsibility for the their fulfillment.” Kolajová (2006: 12) explained it wittily “Team = Together Everybody Achieves More.” When explaining the team, the economic principle is considered as its basis. It is worth to build a team only when the team is able to achieve more than individuals. It is the concentration of group potential in order to achieve the goal in most effective way. Team is intentional and focused group of several people with regard to the task to be achieved. Teams should not be put together randomly. On the other hand, it is an intentional choice, an assembly and combination of such members who have different, but necessary for the role, expertise, approach and features of character, and their cooperation will bring greater effect than the sum of their individual performances would. Among the important features of team is the fact that team is in the most satisfactory way higher form of specialized work group which follows a rule of temporary duration, a special form and organization of work, richer dynamics of internal interactions, the members have equal rights, the information process flows directly and in a straight line, motivation comes from inside and competition is directed outwards. The companies create teams because they are more creative and more efficient than individuals and classic groups, they respond to challenges in more flexible way, they identify errors and shortcomings faster and are more willing to take risk and to try out some original solutions. Teams are created of people with different expertise and they often perform different functions and are more efficient in solving the tasks, in which several expert areas are dissolved. The teams are also beneficial to their members – they increase their stability and loyalty, they create space for self-actualization and provide acknowledgement. They motivate and enrich their members, learn them to respect and honour others, mobilize technical and social skills of members. The atmosphere of trust and support improves the quality of work life of employees.

Team does not display its advantages immediately after the establishment. Team is a social organism, and for its growth and maturity it needs a certain time. The development of the team has several phases. The authors differ in the distinguishing of team development phases. Urban (2003) describes three phases (introductory, conflict and resulting), Krüger (2004) mentions three phases (formation, orientation, activation/stabilization), Armstrong (2002), Bay (2000) and Dědina and Cejthamr (2005) indicate four phases: orientation and shaping, confrontation and discussion, consensus and standardization, and finally integration and performance. Bedrnová and Nový (1998) distinguish five stages: (1) forming: when the team is developed, the goals are formulated, they reflect expectations, and the workstyle is proposed. Members of the team are establishing their position within the team. The second phase is storming (2), which shows differences in expectations and views of the members. There is competition and struggle for positions, the members pursue their visions. During the third phase, norming (3), the team agrees on the objectives and rules, members accept their roles in the team, the cooperation begins. Performing (4) is the phase of the team development during which the team is productive and efficient, the members apply their strengths and cooperate, they complement mutually each other and the synergistic effect is manifested. Adjourning (5) is the phase during which the team finishes its work, i.e. successfully completes the tasks at hand. Team officially stops its work, the members are returning to their former positions, but relations and willingness to engage remain; members are seeking new opportunities for their self-assertion and they are ready to create the team again and to work.

Team is often discussed because of its management. The term “team management” may seem paradoxical since it suggests that all team members are equal. A team has several members and cannot work without a supervision. On the other hand, team cannot be managed by all its members. Here the question of entity and content of team management arises. The academics give answer in the form of theoretical models, but it is also found in practice of successful and advanced teams. The practice shows that team acknowledges the subject of management, the subject which gives its knowledge and abilities for the benefit of all members (for the team as a whole or for whoever at that stage of the team development contributes the most) and is for the team as a whole most useful. Advanced teams confirm that the team needs a leader. This is necessary because there must be an individual who sets up a team and creates the basic conditions and environment for the establishment and work of the team. The leader providing inputs and outputs of the team and its communication with the environment. An individual who monitors and promotes effective and constructive communication within the team in action/collaboration; provides links between the team members and coordinates their activities. He/she also supervises the respecting of the rules and agreements and prevents or resolves

disputes/conflict situations inside the team. The team members appreciate an individual supervising them (not only their results), who is able to advise and encourage them.

When discussing the team, the major topic should be the team activity. In practice several different types of teams are working – strategic, design, innovative, operational, as well as teams which shall improve the qualitative or quantitative parameters of specific company activities (development, production, sale, cooperation, etc.). Particular team activities may differ. To find a satisfactory answer means to realize the mission of the team and the main problem to be solved. Team is a specific means to solve a problem. The work of team in this case is represented by all activities that team members are doing collectively in order to solve the problem. The tasks to be made by teams are usually various, while the main activities of the teams are identical. Team begins its work with problem analysis, problem definition, causal analysis and goal identification. In the next step it sets the criteria for solution and success. The essential step is to work out several alternative solutions to the problem. Then a team has to select the best solution. The next difficult step is to implement the chosen solution with all the required features. The final step is to deliver the solution. Many teams end their work with self-reflection and by evaluation of experiences.

Teams do not limit themselves to the main group activities. The most important common feature of teams is the nature of their activities, i.e. cooperation of members. The cooperation has a variety of forms, but the following common features:

- Common or consistent (steadfast) action of member toward a set goal.
- The main strategy of social behaviour of members is to ensure profit for all.
- Harmonious performance of overall work or partial tasks by using several expert viewpoints.
- Shortcomings of some team members are complemented by the advantages of other members.
- Ideas, thoughts and activities of one part of the team stimulate ideas, thoughts and activities of the other members and new quality is created by synergy.

The basis for team cooperation is a work focused on a common goal and common benefit of each team member. The human work behaviour is influenced by many factors. Apart from his/her personal characteristics and qualities, training and gained experience, also the influences of socio-economic and socio-cultural environment from where they originate are reflected in their work behaviour. For example, Armstrong (2002), Flešková and Dolinská (2010), Donnelly Jr et al. (1997). In the context of globalization and internationalization of entrepreneurship, a new aspect enters the “classical” topics of the working groups and teams – the cooperation of people from different countries. The managers have to work with groups of employees from different cultural mi-

lieu. The multicultural nature of the workforce is in some companies an advantage, while in some companies it is bringing problems. Therefore, multiculturalism is an important challenge for academics, managers and personnel managers in the work environment and business. A great space is being opened for universities and educational agencies that prepare future managers.

According to Dolinská (2010: 13), "Multiculturalism consists of three phenomena: it is a real social fact, political agenda and ideology of building a peaceful cooperation of different cultures." Multiculturalism represents connection, blending the cultures of various ethnic groups in one area, but can also be understood as the effort for equal position of nations, ethnicities as well as social groups in a common area or in a one community. Its essence is the respect for cultural, national, ethnic, linguistic and religious differences.

Mistrík (2008) distinguishes among:

- a. Conservative multiculturalism, which respects the diversity of cultures in a region but considers it as negative and presents one culture as a superior to others.
- b. Liberal multiculturalism, which respects the diversity of cultures in a region and considers it as positive. The culture is left on its own devices whether becomes stronger or not.
- c. Critical multiculturalism, which respects the diversity of cultures in a region but is aware of the advantages and disadvantages of this situation.

The application of multiculturalism into working groups and teams means that companies have to:

- Realize that cultural differences among people from different countries exist and if they are not acknowledged they may hinder the cooperation.
- Know the essence of cultural differences and ways of overcoming them.
- Know the types of situations in which difficulties due to cultural differences may arise.
- Have a clear standpoint on this issue, adopt a strategy and principles of action in such situations.

Let us characterize each of item. Sociological interpretation of culture says the culture plays very important role in the lives of people, groups and society. It consists of "a set of activities and products of these activities that enable people to survive in the natural environment, together with a set of ideas (beliefs) and concepts, aim of which is to give the sense to this survival" (Chorvát 2000: 14). Culture is a complex phenomenon. It consists of material elements – materials, the products of human activities, intangible values that help meet the spiritual and social needs, socio-cultural directions and social institutions that allow manage and regulate behaviour. Culture through values, norms, patterns, ideas, tradition, styles of thinking, way of communication... learns, restricts, calls, and forms people – it enters into their lives and acts in them. Everyone carries in themselves the essential elements of cultural groups to which he/she be-

longs. The family, professional, corporate and national culture are important. Cultures of groups, families, but above all the cultures of companies and countries, are not the same. The differences are expressed by cultural standards. They determine what is normal in a given culture, e.g. in trade negotiations. Mikuláščík (2010) identifies five dimensions, in which the behaviour of people from different cultures can vary at work: power distance, uncertainty avoidance, individualism, masculinity versus femininity, and short-term versus long-term orientation. When people from different cultures meet, also different values, norms, patterns, traditions are meeting, and the differences can cause misunderstandings and difficulties. Such situation in the work environment is the cooperation in a multicultural team. The cooperation may be broken by the differences in elements of the culture of those who cooperate.

Because the essential condition for cooperation is the effective communication, we can say that more troubles in cooperation of the employees from different countries will appear after all in a communication. The same conclusion was also reached by Nový (1996) and Nový and Schroll (2001). American researchers Brett, Behfar and Kern (2006) formulated four challenges, which need to be answered in the managing the multicultural teams: direct versus indirect communication, trouble with accents and fluency, differing attitudes toward hierarchy and authority and conflicting norms of decision making. Through these challenges they indirectly pinpoint sign the sources of difficulty. However, they add that identifying the type of challenge is only the first step. The more crucial step is assessing the circumstances or, “enabling situational conditions” under which the team is working.

Each day globalization and international entrepreneurship create situations when people from foreign countries are interested to work in a company. Alternatively, the company is interested in cooperation with people from other countries. Quite specific case is that of the virtual international team. The object of our interest are situations where the company wants to operate a business in another country and by FDI (foreign direct investment) creates a new company or a branch and employs local people, or it starts a joint venture in another country with domestic company. Although the size of property and power share is important in such a case, the problem of multiculturalism is a sure fact. The employees from different cultures and societies meet in such companies in all types of situations and they have to cope with them. Companies can apply three models:

1. The model of cultural dominance – when culture of “mother company” and its affiliates will dominate (cooperating companies will be taken over).
2. The model of cultural plurality – in which case cultures of all the countries where company operates are respected.
3. The model of culture synergy – when appropriate elements/standards from cultures of cooperating countries are selected and from them a new social culture is created.

Several authors paid attention to mutual relations between various cultures and ways of their establishing. For example, T. Cox (1991: 35) from the University of Michigan developed organizational models for integrating culturally divergent groups. His model has 6 dimensions:

1. Acculturation – mode by which two groups adapt to each other and resolve cultural differences.
2. Structural integration – cultural profiles of organization members including hiring, job placement and job status profiles.
3. Informal integration – inclusion of minority culture members in informal networks and activities outside of normal working hours.
4. Cultural bias – prejudice and discrimination.
5. Organizational identification – feelings of belonging, loyalty and commitment to the organization.
6. Inter-group conflict – friction, tension and power struggles between cultural groups.

Brett, Behfar and Kern (2006) found that the most successful teams and managers used 4 strategies for dealing with challenges stemming from work in multicultural teams:

1. Adaptation – acknowledging cultural gaps openly and bridging them.
2. Structural intervention – changing the shape of the team.
3. Managerial intervention – establishing norms early or bringing in higher-level manager.
4. Exit – removing a team member when other options have failed. This strategy is the strategy of last resort.

Mature companies do not wait for troubles arising from multiculturalism, but create conditions for the operation of multicultural teams and the managers for intercultural teams are trained in intercultural skills.

5. Multicultural teams in several Slovak joint ventures

The joint ventures of Slovak companies with foreign partner brought the phenomenon of multiculturalism. The arrival of the strategic partner means changes in ownership and in the power relations inside the company. The partner clearly defined long-term and short-term business goals and determined the ways and methods to achieve them, as well as the priorities: active business behaviour, orientation on profit, minimizing the costs and the focus on the core business. The strategic partner also changed the structure, organization and management of the company, applied process management, invested modern technology, developed marketing and commercial activities and corporate cul-

ture in order to support customer orientation on a customer. After arrival of the strategic partner the demands for professional and managerial competencies of managers at all levels of management were increased, as well as the amount and range of work, time for its performance was reduced, pressure on personal responsibility grew also with the pace of work and complexity of the tasks. New technology and new forms of work under new principles of management increased the demands on managers and staff, too.

What was also significant was the intervention in the personnel area. The strategic partner reduced the workforce in order to reduce the costs. New tasks, new technology and new style of management required the change in the quality of staff. Therefore, a lot of original employees were made redundant and new employees were obtained. This step changed the age, education and gender structure of staff in company. The strategic partner understood that the people played a key role in changes and that it was their professional competencies, their attitudes to a company and especially to the changes, that determined the success of the transformation process. Therefore, the strategic partner nominated his own professional staff from the “mother company” and later, the people from third countries to perform the important managerial positions and work in temporary working groups and teams. The people from different countries met in working groups and teams in that moment. The Slovak joint ventures were changed into international and multicultural companies. It did not mean only two new attributes, but it meant the new element in their management. Selected results of the creation of those multicultural teams, their missions and the main tasks, their composition, the phases of their development and their managing and troubles in teamwork are presented shortly in this section.

The first teams in Slovak joint ventures were created in the first phase of transformation – in the phase of privatization. Their mission was to solve the tasks related to the project of privatization and to elaborate the variants of development of company after privatization. The teams were created of selected Slovak employees from different departments of a company who were competent and willing to cooperate on the solution of non-standard tasks (privatization) and in non-standard ways (in teams). The teams were managed according to the principles which were original. The team leader was the general manager or his/her representative. The foreigners did not work in those teams at that time. The teams asked for international cooperation (in a form of consulting and advices) later. This moment was crucial because for team members it was the first real working contact and the first experience with international partners and with their cultures.

The cooperation with strategic partner changed this situation. The foreign strategic partner used the teams and teamwork more. The term “team” was then used in two meanings:

1. The real team with all its characteristics. This type of team arose as a direct result of project management. The strategic partner used this approach according to his own corporate culture and all major changes in company were handled as a project. For each project the special transformation team was created.
2. Stable working group with no characteristics of a real team, but this term was used as a symbol of the change.

The strategic partner occupied the most of managerial and important positions in the stable working groups with his own employees (except the department of human resources) and more team leaders in those teams were his employees, too.

The tasks of teams were changed along with progress of a company transformation. In the early stages of joint venture the teams played a role of rescuers of a company. During the next phase, their role was changed to assistant in the transformation of company. During this phase the teams solved specific tasks which emerged from transformation of company, e.g.: restructuring company, modernization of the equipment, the modernization of the organization and products. During the next phase teams were employed in unifying activities of all the subsidiaries and improving their performance. Today the companies use the teams to solve and implement innovations and to apply the latest knowledge and increase competitiveness of the company.

The composition and development of team is internal matter of companies. The strategic partners pay increased attention to the management teams on the all three levels of management. The members of top management were selected from the foreign employees (only a small part from the group of Slovak managers) depending on their expertise and their experience in working abroad. The special teams were created from foreign employees and Slovak specialists. The teams were managed by experts of strategic partners or by experts hired by strategic partners from the third countries and they were supplemented with the most advanced Slovak employees. The team members were distinguished and associated according to three profiles: I-profile represented by the persons who were experts but narrowly specialized; T-profile, those who were professionals and were able to see their extensive expertise in a wider context, and V-profile, who were able to take into account the wider context and to penetrate a problem step-by-step and deal with its details.

The strategic partner did not pay attention to the development of teams. It relied on the experience of their team leaders. The teams developed according to stages described in the literature. They had some troubles, though, e.g.: the Slovak members were afraid to speak out their minds; they were restrained and had the respect for foreign team members. On the contrary, the foreign team members strongly used their well-established models and principles of coopera-

tion. Those models and principles were little different from Slovak team members, but they wanted to learn it.

The cooperation and teamwork was complicated because of communication, too. The ability to communicate in English was one of the barriers in cooperation in multicultural team. It is quite interesting because English was not the mother language for anyone. The second problem in cooperation was the technical language. Teams solved this problem by using the dictionaries of technical terms, by verification of understanding of all the conclusions and from meeting, tasks and by cooperation with interpreters. The teams found that the effective tool is imperative – to communicate precisely and to pay attention to context of communication. The teamwork was broken by differences between Slovak and foreign team members in terms of knowledge about strategic partner's intentions. The problem in cooperation was caused by differences in culture of management. The foreign employees acted as agents of change and the Slovak employees were considered as an implementer of change.

Very serious obstacle in cooperation was the lack of time for natural development of team. The professional team had to solve hard tasks in very short time. In practice, it meant that “the forming” time was short, “the storming” was hard and “the normalizing” was directional – team leaders set the values and the principles authoritatively according to their experiences. The most of the teams had to shorten the first phase of development and had to enter into “the performing” phase. They had to produce the solutions on time. Promoting openness in the team, the construction of mutual trust and forming constructive attitudes in multicultural teams were very slow and they were reflected in efficiency of work. The new and younger Slovak employees adopted principles of the international teamwork quickly because they considered the work in team as a good opportunity for self-actualization. The weaknesses of these group members were the lack of knowledge of the real situation in the company. The other Slovak team members took their roles slowly.

The troubles in managing multicultural teams appeared as a consequence of overloading some team members. They were e.g. employees from human resources department who were delegated to many professional teams and their tasks were to prepare appropriate personnel and handle the human side of change. The state of teamwork improved gradually when participants obtained experience with cooperation and with different cultures. The consulting firms which helped in transformation played positive role in this situation. Their employees were not specialists in technical, economic or marketing issues only, but they presented and applied a lot of positive experiences with teamwork and with managing multicultural teams, too. They showed that a lot of problems in managing multicultural teams were not caused by people, but the problems stemmed from the differences between the cultures of foreign and Slovak employees. Very frequently differences came from corporate and partly from na-

tional cultures e.g. access to tasks and obligations, professionalism, consistency in work, personal responsibility, discipline, rigorous personal preparation and planning activities, eliminating improvisation, professional and substantive arguments, and preferring relations to results.

Some cultural differences were highlighted because the foreign employees' residence was limited in time and they wanted to achieve maximum effects through strict adherence to values, principles and approaches. The effort to achieve visible change in the technical, economic or in other areas, considerably weakened respect of the human side of change, cultural differences among employees, too.

In the management of multicultural teams the model which prevailed was that of cultural dominance of foreign strategic partner. It resulted from its majority ownership, impossibility to use the elements of corporate culture of original socialist enterprise in the new socio-economic environment.

The management of multicultural teams is more successful when companies organize training for cross-cultural and managerial skills for the team leaders and members. The strategic partners neglected this moment. They put greater stress on professional development because it was considered more important. The situation was changed when companies became stable, when the transformation process was completed and the companies obtained the characteristics of modern European companies. The impact of foreign strategic partners and their culture is still visible in Slovakia today.

6. Conclusions

Transformation of the original socialist enterprises into a modern European companies was accompanied by many other significant changes. Those changes concerned all parts of the companies. People had special role in this transformation, since in addition to economic or technical context of change, there was a human side, too. A part of this human side was a relatively new concept of multiculturalism.

The world becomes more diverse due to globalization. The diversity also contributes to culture. To be able to live and work in such a culturally complex world, it is necessary to seek guidance and experience in the companies created together with foreign partners. My research offers the following key findings:

- Globalization promotes the internationalization of business in a form of joint ventures. This form of collaboration also brings issues of cultural diversity of companies and employees.

- Cultural diversity of companies constitutes an incentive to address the challenges associated with the establishment, operation and managing of multicultural teams.
- Leading multicultural teams of managers necessitates the creation of such conditions that respond to the fact that people come from different cultural backgrounds and this affects their work behaviour.
- Cultural diversity of employees is beneficial for the company if it is managed efficiently.
- An important condition for effective teamwork in multicultural teams is the recognition of the diversity of employees and the need for appropriate methods of management.
- A group consisting of people from different countries needs time to turn into an effective multicultural team that has a real team spirit.
- Most of the cultural differences are ultimately reflected in communication and regardless of these differences communication can be effectively managed.
- The creation of multicultural teams should be supported by cross-cultural training, which improves intercultural skills of team members.

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The intercultural dimensions of the cultures in transition process in Central and Eastern Europe

Abstract: The business environment and management of the Central and Eastern Europe countries has been continuously under the influence of crucial changes since 1989. All countries within the CEE region started the integration into global economy with the impact on the rapidly transforming mosaic of new managerial experiences and behaviour which has been changed over the time and varied from firm to firm in all these countries. The aim of the paper is to describe the cultures in transition process focusing on the new managerial experience in the historical and comparative contexts. The management of the CEE region entered the multicultural environment where new skills were developed mainly in the area of international marketing, competing in the global business, cooperating in the international projects and teams, and face the new challenges of the constant learning process.

Key words: international projects and teams, multicultural management, transition process.

JEL codes: M210

1. Introduction

The political economy of many of the world's nation-states has changed radically since late 1980s. Two trends have been evident. First, during the late 1980s and early 1990s, a wave of democratic revolutions swept the world. Totalitarian governments collapsed and were replaced by democratically elected governments that were typically more committed to free market capitalism than

their predecessors had been. Second, there has been a strong move away from centrally planned and mixed economies toward a more free market economic model.

Culture is both simple and difficult to understand. It is simple because definitions abound that are easily understood by any reader. At the same time, culture can be difficult to comprehend because of its complexities. The development of the culture of the nation is a long process which is influenced by political, economic and social changes.

The objective of this paper is to address the process of culture transition in the region of Central and Eastern Europe (CEE) after the year 1989. More precisely, we apply the model of cultural dimensions by Greet Hofstede in order to identify cultural differences in 4 Vysehrad group countries which have been undertaking the transition process. Through the theoretical research, our aim is to identify how fundamental cultural dimensions were implemented in the CEE region. Thus, we explore the economic changes in countries in transition, their impact on the national culture, and more specifically, we study the experiences within the international projects.

The empirical methodology in our research is qualitative and based on case studies and interviews with managers working for foreign companies in the CEE region. These research methods provide us with in-depth analyses of how the cultures are formed and developed both in historical and comparative context. We attempt to define four stages of the culture in process of transition.

2. The nature of economic transformation

The collapse of communism in Eastern Europe was precipitated by the growing gulf between the vibrant and wealthy economies of the West and the stagnant economies of the communist East. In looking for alternatives to the socialist model, the populations of these countries could not have failed to notice that most of the world's strongest economies were governed by representative democracies.

The shift toward a market-based economic system often entails a number of steps: deregulation, privatization, and creation of a legal system to safeguard property rights (Hill 2011: 73).

Deregulation involves removing legal restrictions to the free play of markets, establishing private enterprises, and operating private enterprises in different ways. This opened the door to the privatization, which transfers the ownership of state property into hands of private individuals, frequently by the sale of state assets through auction. Well-functioning market economy requires laws

protecting private property rights and providing mechanism for contract enforcement. Many CEE countries lacked the legal structure required to protect property rights. For example, the title to urban and agricultural property was often uncertain because of incomplete and inaccurate records, multiple pledges on the same property, and unsettled claims resulting from demands for restitution from owners in the pre-communist era. The government policymakers and implementers also face (and sometimes create) uncertain situations in which they have neither the experience nor the education to operate effectively.

The macroeconomic factors of life in Central and Eastern Europe before transition process has started may be summarized as follows (Grayson-Bodily 1996; www.iiasa.ac.at):

- Because of the unfavourable economic legacies left by the respective communist regimes, the post-communist governments had to adopt restrictive economic policies which caused recessions in the domestic markets; the recessions most unfavourably impacted companies such as those selling home improvement or other postponable consumer goods.
- The collapse of the communist regimes somewhat coincided with cyclical recessions in Western Europe and North America, the Soviet bloc markets collapsed in 1991.
- In addition to the recessions in Western Europe, export possibilities were harmed by the tariffs and quotas erected by the European Union (EU), especially in industries where CEE countries had spare capacity such as agricultural products, steel, and textiles.
- Successive devaluations of domestic currencies, vis-à-vis US dollar or Deutschmark, raised the prices of imported goods; for domestic producers the degree and timing of the devaluations added to already existing uncertainty and for the foreign joint ventures partners devaluations decreased their income.
- As the target countries reduced their tariffs and quotas – in an effort to liberalize – foreign companies entered the markets causing domestic companies giant problems.
- Most of the CEE companies at the beginning of 1990s have started to integrate themselves into world economy.

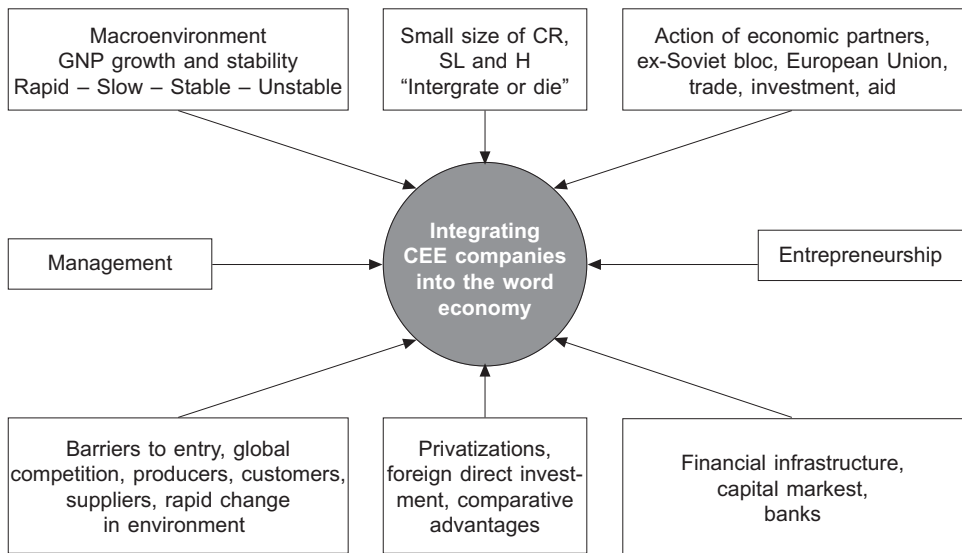


Figure 1. Factors determining integration into world economy
 Source: Grayson-Bodily (1996).

3. The region of Central and Eastern Europe

Vysegrád group countries (the Czech Republic, Poland, Hungary and Slovakia – V4) have a common ground in the transition process such as central planned economy, dependency on the Soviet Union market and common history as it used to Czechoslovakia till 1993 and even older historical tights in the Austro-Hungarian Empire.

3.1. The transformation process of the Vysegrád group countries (V4)

The political, economic and legal environments of a country clearly influence the attractiveness of that country as a market or investment site. The benefits, costs, and risks associated with doing business in a country are a function of that country's political, economic and legal systems (Hill 2011: 76).

Despite years of political and economic change, including liberalization, in the Central and Eastern European (CEE) region it still attracts a relatively small percentage, i.e. 3 to 4% in 2003, of foreign investments. The importance of pri-

vization initiatives in attracting foreign investors to the region is illustrated by the fact that a decline from a record 31 billion USD of inflows in 2002 decrease to 21 billion USD in 2003 was almost entirely due to the end of privatization in Slovakia and the Czech Republic (Rugman and Collinson 2006: 575).

Poland, the Czech Republic and Hungary received larger shares of foreign direct investment than other countries in the region, but also have experienced declines in recent years, as the Russian Federation has. These all V4 countries have joined the European Union in May 2004 and all saw foreign direct investment (FDI) inflows shrink, but prospects look better for the future.

After 1989, Vysehrad group countries started the integration into the world economy through rapidly transforming mosaic of managerial behaviour which was changing over time and varied from organization to organization in all studied countries. Nevertheless, certain fundamental features of understanding and running the business were observed in all four countries:

- Prior to 1989 companies had no foreign market intelligence, no foreign market research, they had to move from producer orientation to consumer orientation.
- Old marketing approach: "If you produce, they will come."
- Foreign investors viewed CEE countries as export base because of their low labour costs.
- CEE companies regarded many joint ventures as vehicles to entering these markets and the former Soviet Union.
- No pattern of behaviour that could have been prototypical.
- Success was determined, to a large extent, by the managers' flexibility to adopt to rapid, unpredictable changes.

Changes in macroeconomics, microeconomics and in the managerial behaviour were very important for foreign investors to look at. Some of the V4 countries were attracting automotive investors, including Toyota-PSA's investments in the Czech Republic, and PSA, Kia and Hyundai investments in Slovakia. Volkswagen Slovakia is country's largest company and biggest employer in the automobile sector together with another big employer – US Steel Slovakia. In Hungary, the industry that gains the most FDI is the pharmaceutical and food industry.

3.2. Cultures in transition – managerial experience in the historical and comparative contexts

Having examined the macroeconomics and microeconomics of the V4 countries, in this section we explore how the managerial behaviour has developed

and changed after 1989. Problem areas relate both to bad habits developed in the previous environment and to newly acquire nonproductive behaviour.

The state-owned enterprises were playing an important role in V4 countries at the beginning of transition process due to following reasons:

- They tended to have a large number of employees.
- They had huge, fixed, single-purpose assets and were capital and energy intensive.
- They generally employed out-of-date technology and equipment that governments could not afford to replace.

The managers from state-owned companies, those which had been privatized right after 1989, gained their first new managerial experience, such as fostering relationships with new partners, mostly foreign investors, negotiating the business deals, very often in foreign language, and important experience in marketing and management based on the market principles. Most privatized firms preferred foreign partners for their needed capital, markets, technology and management. Through the research and theoretical background we have identified four main stages in cultural process of transformation in all V4 countries that can be described as follows:

First stage: 1989–1995 characterized by the beginning of transition to market based approach, split of Czechoslovakia and the extensive privatization process.

Second stage: 1996–2003 characterized by the emphasis on the gaining the new managerial experience offered through many mergers and acquisitions, rapid development of the foreign cooperation offered by various international experts and international programs.

Third stage: 2004–2008 where the main event was the acceptance into the EU of all V4 countries.

Fourth stage: 2009–until present characterized by the euro currency acceptance in Slovakia and the effects of the global economic recessions in all V4 as the part of the world global market.

In the following part of the article we will emphasize the cultural issues in selected V4 countries, such as Poland, Slovakia, the Czech Republic and Hungary, which will be analysed by using fundamental intercultural theory developed by Hofstede, and we will provide several research outcomes.

4. Intercultural dimensions

According to Luthans and Doh (2009: 96), the culture is defined as acquired knowledge that people use to interpret experience and generate social behaviour. This knowledge forms values, creates attitudes, and influences behaviour.

Steers, Sanches-Runde and Nardon emphasize more on the results of the different cultures. They argue that culture can make a difference in determining how we think and how we behave. This is equally true in our personal lives and our work lives. Unfortunately, too many managers have ignored even the most rudimentary cross-national differences while working overseas and, as a result, have missed significant opportunities for themselves and their companies (Steers, Sanches-Runde and Nardon 2010: 46).

There are many ways of examining cultural differences and their impact on international management. Culture can affect technology transfer, managerial attitudes, managerial ideology, and even business-government relations (Luthans and Doh 2009: 97).

Hofstede (2001: 34) has attempted to provide a composite picture of culture by examining its parts or dimensions. He identified four dimensions and later a fifth one, such as power distance, uncertainty avoidance, individualism, masculinity and time orientation. We analysed and characterized the cultures of V4 countries based on the Hofstede's cultural dimensions.

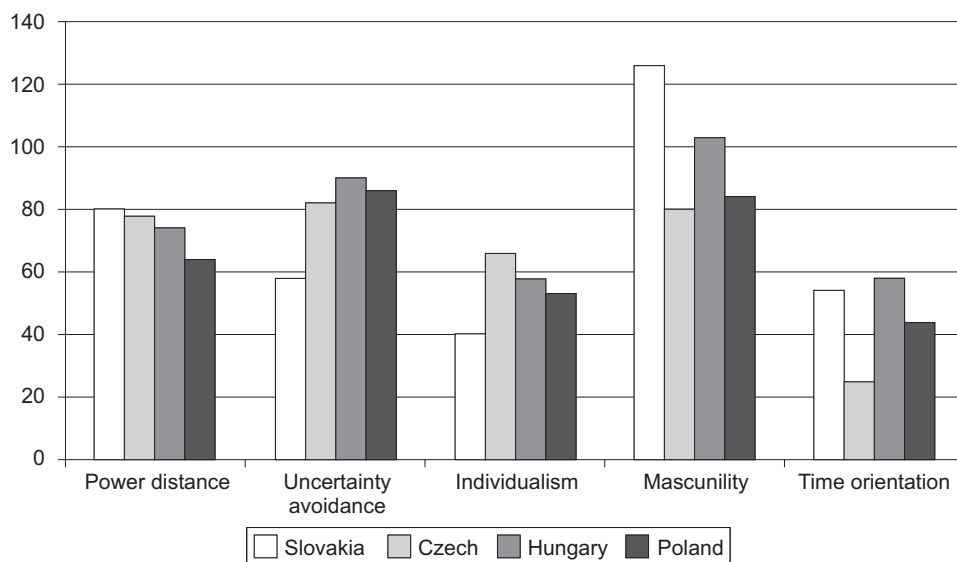


Figure 2. Hofstede's cultural dimensions in V4 countries

Source: www.internationalbusiness.wikia.com.

The culture of Slovakia is the most dominant in masculinity dimension among the others, the culture of Hungary has dominant uncertainty avoidance together with the culture of Poland.

The culture of the Czech Republic is dominant in individualism dimension among the other V4 cultures. Every dimension has an impact on the behaviour, working attitudes, and life preferences and small changes have been already no-

ticed due to the different economic and politic development in each individual V4 country.

Individualism is the one side versus its opposite, collectivism, that is the degree to which individuals are integrated into groups. On the individualist side we find societies in which the ties between individuals are loose: everyone is expected to look after themself and their closest family. On the collectivist side, we find societies in which people from birth onwards are integrated into strong, cohesive in-groups, often extended families (with uncles, aunts and grandparents) which continue protecting them in exchange for not questioning loyalty (www.clearlycultural.com). Hofstede found that wealthy countries have higher individualism scores, and poorer countries higher collectivism scores (Luthans and Doh 2009: 105). A description of the various dimensions of culture is useful to explain the differences between countries. We would probably assume that V4 cultures are very similar to one another due to a common history, religious similarity and also political and economic cooperation during the centrally planned economy period.

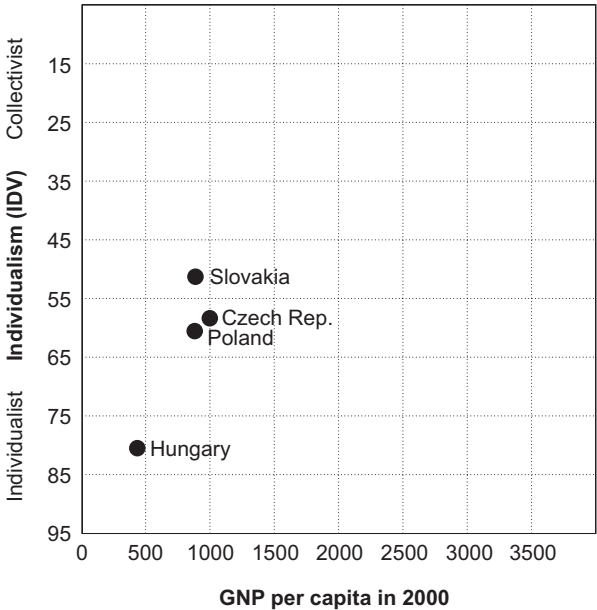


Figure 3. GNP per capita in 2000 versus individualism

Source: Hofstede, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2001.

Even though the all V4 countries have common collectivism history during the socialism period and the current statistics of GNP per capita is very similar, their individualism dimension varied. The reason for this could be in the reference to political system, number and depth of the economic reforms, different

experiences with other cultures and with multicultural environment and also behavioural pattern established within the society, e.g. Slovak managers were found by foreigner very modest, with little self-confidence and with the great emphasis to belong into the group.

Power distance is the extent to which less powerful members of institutions and organizations accept that power is distributed unequally. Countries in which people blindly obey the orders of their superiors have high power distance. In many societies lower-level employees tend to follow orders as a matter of procedure. In societies with high power distance, however, strict obedience is found even at the upper levels.

The effect of this dimension can be measured in a number of ways. For example, organizations in low power distance countries generally will be decentralized and have move horizontal organization structures. These organizations also will have a smaller proportion of supervisory personnel, and the lower strata of the workforce often will consist of highly qualified people. By contrast, organizations in high power distance countries will tend to be centralized and have tall organization structures. Organizations in high power distance countries will have a large proportion of supervisory personnel, and the people at the lower levels of the structure often will have low job qualifications. This latter structure encourages and promotes inequality between people at different levels.

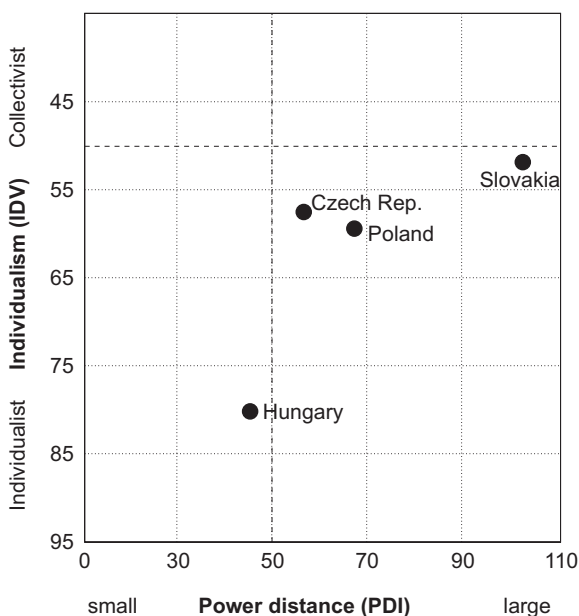


Figure 4. Power distance versus individualism

Source: Hofstede, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2001.

The culture of Hungary is identified much stronger in the individualisms dimension and lower power distance dimension than remaining three cultures. The explanation might be that Hungarians prefer to do things for themselves and they do not mind when others have more power than they do. Hungary has started the privatization process earlier and it took a large portion of country's national wealth. In the entrepreneurship Hungarians are famous to be very brave, opened to new ideas and very flexible.

Uncertainty avoidance measures the extent to which a society feels uncomfortable with the ambiguity that typically arise from the unknown or surprises. Cultures with high uncertainty avoidance try to minimize uncertainty through strict laws and rules as well as safety and security measures. People in these societies tend to be more emotional, and are motivated by inner nervous energy. In general, societies with lower uncertainty avoidance are more tolerant of new and different opinions. The cultures prefer as few rules as possible. Typically, people in these cultures do not easily express their emotions. Based on Hofstede's statistics, the world average uncertainty avoidance score is 64 points per country (www.suite101.com).

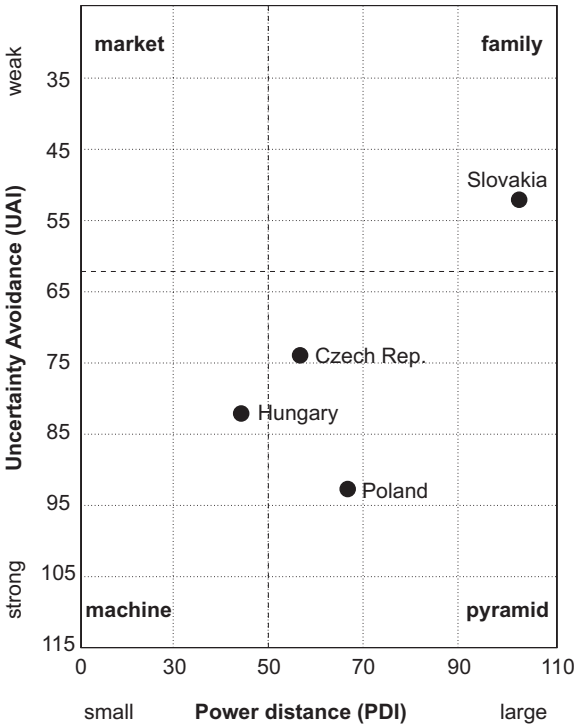


Figure 5. Power distance versus uncertainty avoidance

Source: Hofstede, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2001.

In this dimension the culture of Slovakia is characterized with much weaker uncertainty avoidance together with large power distance dimension than other V4 countries. We can explain this within the organizational concept – family type where there is a great respect to positions but also reliance on the development of the relationships and support.

Masculinity stands for a society in which social gender roles are clearly distinct. Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life (Hofstede, 2001: 187). Countries with a high masculinity index place great emphasis on earnings, recognition, advancement and challenge. Individuals are encouraged to be independent decision makers, and achievement is defined in terms of recognition and wealth. The workplace is often characterized by high job stress, and many managers believe that their employees dislike work and must be kept under some degree of control.

Countries with low masculinity (Hofstede's femininity dimension) tend to place great importance on cooperation, a friendly atmosphere and employment security. Individuals are encouraged to be group decision-makers; an achievement is defined in terms of layman contacts and living environment.

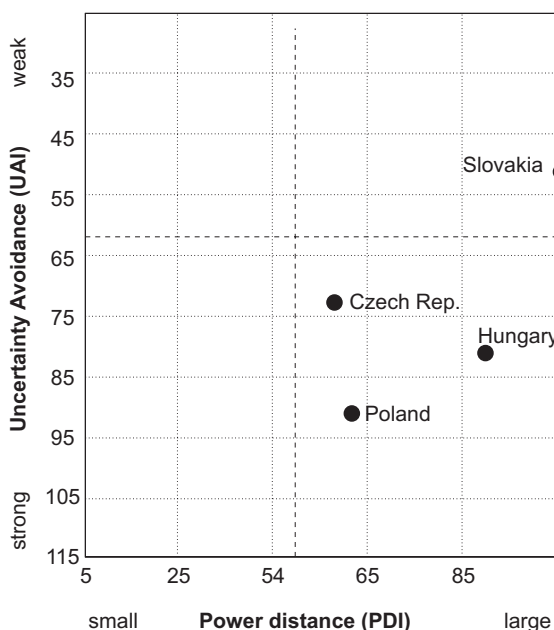


Figure 6. Masculinity versus uncertainty avoidance

Source: Hofstede, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2001.

All V4 cultures are within the masculine cluster with the small difference of Slovakia's weaker uncertainty avoidance. The success in job, orientation to earn more money, internal competition among employees resulting in the high stress is very common in most of the companies in CEE. This also explains the transformation process that these cultures are going through. It is in contrast with the previous values from the socialism where good relations and atmosphere at work place was considered the most important for employees.

Time orientation is the dimension added by Hofstede lately. The long-term orientation stands for the fostering of virtues oriented towards future rewards, in particular perseverance and thrift. Its opposite pole, short-term orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of "face" and fulfilling social obligations (Hofstede 2001: 192). The differences between these dimensions are shown in Table 1.

Table 1. Long term versus short term orientation

Low long term (i.e. short term)	High long term
emphasis on quick results	emphasis on persistence
status not a major issue in relationships	relationships ordered by status
personal steadfastness and stability important	personal adaptability important
protection of one's face is important	face considerations common but seen as a weakness
leisure time important	leisure time not too important
spend	save, be thrifty
invest in mutual funds	invest in real estate
bottom line important	relationships and market position important
belief in absolutes about good and evil	good or evil depends on circumstances

Source: Hofstede, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2001.

As a result of the transformation process, it is not very clear, although there are more preferences for the short-term orientation among V4 countries. Even though it might vary from generation to generation and depend on the industry.

4.1. Integrating the Hofstede's cultural dimensions
into the V4 cultures' transition process

The most significant features during each stage of cultural changes and cultural differences among V4 countries will be described in this part.

The first stage (1989–1995) of entrepreneurial managerial activity can be best described as dysfunctional entrepreneurship (Grayson-Bodily 1996). Part of the origin of this activity was established under the regime of central planning. Managers were unable to develop a medium-term business plan, they were facing difficulties to design a system for coordination and implementation and problems to keep budgets and follow schedules. The first stage was characterized by drastic reductions in employment compared with previous state-owned enterprises that resulted in increasing fear of losing one's job.

The two types of the managerial approaches were described in Table 2.

Table 2. Managerial and dysfunctional behaviour

Managerial behaviour	Dysfunctional behaviour
very little fundamental change many managers still act as corporate bureaucrats managers and workers alike show little loyalty to their firms unconstructive criticism managers value their economic and social power, with change their risk of losing their positions	short-term perspective – trade away what you have, quick action, short-term development deal making – manipulation of immature markets, acceptance of huge bank debts, emphasis on growth, profitability not in a consideration culture – yuppie, money, greed, power, media conscious

Source: authors' own analyses based on the research and enclosed literature.

During this period a group of young entrepreneurs, generally energetic, well educated and well traveled with the foreign languages ability has been produced. These people were ambitious enough to accept the high managerial positions even lacking the managerial experiences due to their young age. The predictable end came between 1994 and 1995 when a series of high-flying firms were bankrupt. This happened mostly due to emergence of foreign competition, extreme diversification and very often personal conflicts developed between the founding partners.

During the second stage (1996–2003) of the cultural changes the new managerial experiences were gained due to a vast foreign investment in the CEE region. The research on V4 countries was mainly focused on their preparation for the EU entry. All these countries were studied and several differences have been identified as they are described in the Table 3.

In the third stage (2004–2008) all V4 countries have joined the European Union. The major foreign investment has been already set up; the local cultures experienced lots of cooperation with expatriates working in the multinationals, those operating in the CEE region and those temporary living in all V4 countries.

Table 3. The cultural differences between V4 before their entry to EU

The Czech Republic	Slovakia	Hungary	Poland
– quick liberalization and privatization – creation of the “Czech management approach” – foreign experts and investors are despised – management orientation on technologies, autocratic leadership styles – little emphasis on the employees – professional management, a bit overrated	– legacy of farming society – middle management very cost concerned – little risk taking in business – own capabilities undervalued – high power distance index in companies – low market orientation – strong masculinity gender problems	– strong innovation culture – entrepreneurship mostly in SMEs – new opportunities are highly welcomed, based on the informal contacts – networking and relationships helps to job promotion – high individualism and self-confidence	– individualism, discipline and faithfulness to old principles – strong preferences for formal structures – presence of both “old” and “young” management – zero correlation between the age of organization and management style

Source: authors' analyses based on the research.

Due to these multicultural working experiences and also being a part of the Continental Europe (CE, excluding UK) also V4 adopted some of the cultural features as follows:

- Europeans enjoy more free time and access to free university education.
- High taxes and government interventionism make housing stock rather expensive, especially for youth.
- Free education and easier access to free time creates a condition where youthful indiscretion is prolonged, i.e. they graduate later, join the professional work-force later, and in more troublesome way, delay family planning and have fewer children (Cole 2008).

On the other hand, V4 cultures have adopted also some characteristics of the American and Asian cultures as a result of multinationals from these geographical regions. One of the main changes that were identified during this stage was strong shift from collectivism towards more individualism dimension, especially in Slovakia within the younger generation.

Another change occurred that was typical for the US culture that Slovaks are willing to work long hours and take few holidays in order to achieve better carrier and earn more money. On the other hand, Slovakia, Hungary and Poland were seen by foreign investors (Sony, Kia, Samsung) as cultures with little initiative, no questions and lack of innovations and new ideas. This research findings support the result of the European Innovation Scoreboard where only the Czech Republic is defined as a moderate innovator.

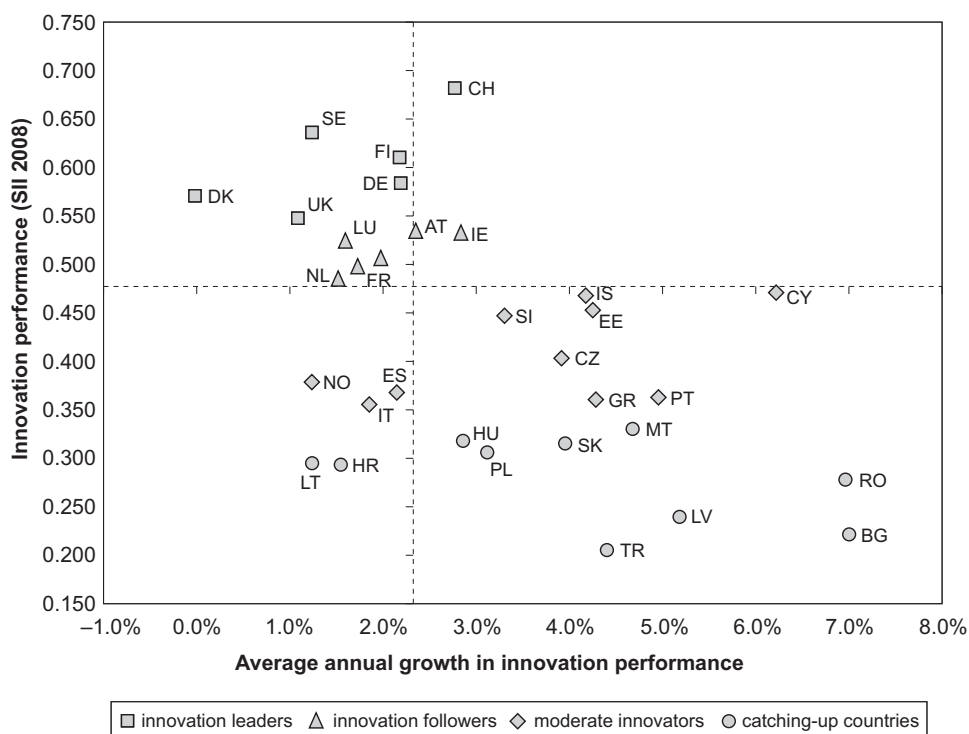


Figure 7. Convergence in innovation performance

Source: <http://www.proinno-europe.eu>.

Since 2009 all V4 cultures start the new stage of transformation which is characterized by the accepting euro currency by Slovakia and mostly by the impact of the global economic recession on all CEE countries as a part of the global market. Through our research the latest cultural characteristics have been identified:

- professional background and comprehensive education on a good level;
- a good knowledge of the local market, legal requirements and economics on the one hand, but on the other hand, more advanced knowledge of the global environment is needed;
- all V4 cultures are experienced in organizing, coordinating and also in the team work using both types of communication is present, i.e. formal and informal according to situation and partner;
- new economic conditions required more emphasis on the innovation, developing creativity in the workplace and ability to take risk and implement new ideas and new skills.

4.2. Intercultural dimension in projects

Interculturality can be defined as the set of relations between different cultural groups. Unlike the older concept of multiculturalism, which simply refers to the coexistence of different cultures, interculturalism refers to the interactions and exchanges that take place between cultures. In that respect, talking about intercultural cooperation in projects we have to emphasize the impact that cultural differences might have on relationships and interactions between project partners. Intercultural projects teams combine several difficulties: the teams are made up of experts coming from different professional fields, different organizations and different national cultures. In addition, in such project settings people often hardly know one another and have to work together at a distance – they are mainly virtual teams (<http://www.nordpasdecals.fr>).

Virtual teams by definition are teams that are geographically and/or temporally dispersed and are brought together by information and communication technologies to perform assigned tasks (Powell et al. 2004).

The contemporary projects are realized in technologically and geographically heterogeneous environment. The project teams participate on huge distances. The communication among project members is supported by the modern ICT. It is more difficult to manage these types of projects in comparison to the traditional projects (Svozilová 2006).

Intercultural project teams and virtual teams are closely connected with the international projects. The international projects are products of globalized economy and they exemplify next stage of project management evolution.

The cultural diversity is advantageous when we talk about the projects related to the innovations. It is necessary that the project manager tries to find the convergent factors for the most of the project team members. One of these aspects is for example the similar status or occupational closeness. The homogeneous project groups are preferred by the routine and simple tasks (Zadražilová 2007).

Regarding this point there are following recommendations for the heterogeneous project teams:

- Project team members are chosen according to their competencies and skills, not according to their ethnic origin.
- Project team members have to accept their mutual differences.
- Project team members from different cultures have problems with the consensus on purpose of their tasks.
- Dominancy of one culture is counterproductive for the project success.
- Project team members have to feel the mutual respect. This is possible to reach with the people who have comparable abilities and skills related to the undertaken project.

- Culturally diverse teams have a problem to identify what is good and bad idea or decision. The project manager gives the feedback to the team members in order to accept the importance of each team member and to trust the judgement of the project team (Hodgest et al. 2000).

4.2.1. Intercultural project teams in Slovakia

We have less experience with intercultural project cooperation in Slovakia because the international projects have started in the larger number in the early 1990s. Since then the situation has been changed. There were the possibilities to participate in EU projects and also the huge number of international projects supported by the new investors from abroad. At the same time the Slovak enterprises started the cooperation in the large projects with their foreign partners. These changes brought the difficulties connected with the intercultural project teams. Regarding this point, the main problem is different understanding of work-related issues and characteristics of individuals. Generally speaking, Slovaks are not always ready to respect or accept other cultures and tolerate the cultural differences (Záčková 2003).

The aim of the research published in a journal *Management in Theory and Practice* in 2010, which was undertaken in the companies in Slovakia owned by the foreign owners, was to identify the barriers in the cooperation in intercultural teams. There were 150 survey participants of this research. Nearly 40% of participants think that there are no barriers between Slovak and foreign workers. Two thirds of respondents suppose that the Slovaks have no problems to accept the elements of other cultures. The most negative aspect considered by the respondents was no sufficient information about the specifics of Slovak culture. Other problem identified by the survey was the distance between the managers and the workers. Almost one third of respondents think that the foreign managers do not know how to motivate the Slovaks (Rusnák 2010).

5. Conclusions

The cultures of the CEE region and specifically the cultures of 4 Vysehrad group countries are going through the transition process. The political and economic changes shape the society and there is obvious transition in main cultural dimensions, i.e. power distance, individualism, uncertainty avoidance,

masculinity and short term orientation. In our research we have identified some challenges in managing intercultural projects efficiently and successfully. The most important are following:

- handling the language barrier,
- dealing with stereotypes and prejudices,
- ability to communicate effectively,
- creating a new culture for the project,
- making the most of the project for professional development and to be opened to new ideas and develop creative solutions,
- managing global projects and dealing with multiple people from different regions, countries with different culture.

The first and obvious challenge in an intercultural project is to **handle the language barrier** effectively. Speaking English for instance does not mean that project partners truly understand one another. This is a major difficulty in projects: combining technical skills with language skills. The paradox is that sometimes, when people speak their mother tongue with the help of professional interpreters, they can be better placed to understand each other than if they use a common language, usually English, which is not for the most part their native language. This raises an interesting question for any project: should the partners use one common language or several languages? That is of course an individual decision for every project team to make, but this question needs to be addressed early enough because it clearly has implications for the budget and for project resources.

Another challenge is to **deal with stereotypes and prejudices**. Stereotypes are images that we draw from experience, but which are based on generalizations. They are not necessarily false, but it is dangerous to believe that they are always valid. Prejudices go one step further because a judgment is formed before one even know the individual in question and because prejudices are always based on negative generalizations.

Finding ways to **communicate efficiently** is essential in any project but particularly in a cross-cultural project. In effect, this means finding ways to reduce misunderstandings. These misunderstandings arise when we misinterpret what we see. Two other challenges of effective communication in cross-cultural projects relate to, firstly, developing systematic communication rather than relying on ad hoc communication (distance can easily break down communication), and secondly, to understanding that communicating about the project is not sufficient because, at the end of the day, people work with people so getting to know people at a personal level is also part of effective communication.

What is essential to success of any project is the ability of the project to **generate its own “culture”** with which everyone will feel comfortable. This means striking a balance between preserving the specificities of each culture within the project and developing a common reference framework, a new com-

mon culture that will draw on the strengths of each individual culture. The challenge is to define new norms (what is accepted, what is not) and new rules for the project, which need not to be the rules of one of the participants cultures, in particular of the culture of the project leader (as is often the case). In effect, the challenge is to find what brings the partners together and what are the values and interests that they share (in other words, what are their shared interests). It is important for project partners to create their own rules, which they will agree on together in order to gain real ownership of their project. Commitment and motivation usually come with ownership. Intercultural projects can also be a very good tool for professional development. There is more to this than merely exchanging best practice. Through such projects, partners can also enhance their own practices.

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Part Two

Intellectual Capital and the Contemporary Challenges

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Remuneration – contemporary dilemmas and challenges

Abstract: Changes of technical and technological nature cause necessity to make a critical review of up-to-date adjustments in many areas of theory and practice. The paper indicates the need to expand the category of remuneration. The justification is, among other things, the specificity of human resources (human capital) as a production factor; the contemporary model of labour market functioning, so-called DMP model as well as basic theses of institutional and behavioural economics. The author applies as research method the analysis of doctrinal writings referring to the topic. These issues can be qualified into economy area of imperfect knowledge.

Key words: remuneration, human resources, human capital, labour market – DMP model, behavioural economics

JEL code: J 300

1. Introduction

An important determinant of human resources management is an effective remuneration of employees. Solutions assumed within the scope of wages and remuneration principles are the most legible form of communication among employees and employer. Due to offered wages, labour conditions, opportunity of professional development, an employee receives a clear message how they are assessed, if their work is noticed and how they take part in fulfilling the goals of an economic entity. Remuneration together with other benefits constitute a major part of expenses that an employer bears. In undertaken projects, the challenge is then to meet the expectations of employees regarding the level of

current remuneration with future advantages. The dilemma is the following: how much funds an employer has to provide for remuneration and how to divide funds, i.e. how much employees receive, so that to gain and to improve their own economic situation and, at the same time, encourage them to more effective performance. Labour theory, that was developed many years ago, corroded to some extent due to social and technological transformations as well as a progress in economic sciences (Wojtyna 2008: 9–30; Fiedor 2010: 453–463). Attempt at revaluation or at least expanding the planes of this economic category or reconstruction of obligatory model seem to be justified. The new model should take into account the output of contemporary economy.

In the paper, the issue of curiosity and exceptionality of human factor, a contemporary model that describes labour market as friction of demand and supply factors, as well as assumptions of institutional and behavioural economics, were indicated. An interesting scientific problem, in author's opinion, is a modern view of the wages scope and remuneration principles. As a final result, the author compares the traditional and contemporary model of labour market functioning.

2. Remuneration – weaknesses of conventional approach

The remuneration category (i.e. wages, salaries) is based on conventional concept of *homo oeconomicus*. A hypothetical, economic human being knows what he/she wants and his/her preferences could be expressed by means of “the usefulness function.” While making a choice, a subject is controlled with rational calculation that constitutes maximizing the advantages. An entrepreneur makes decisions by comparing advantages and boundary costs that result from increase of employment by a next employee. Remuneration level cannot exceed the value of final labour product. This value, on one hand, determines the maximum that an entrepreneur would be inclined to pay to all employees. On the other hand, wages cannot be higher than final value of labour product. As long as additional work “adds” more to incomes than to expenses, it is worthwhile to increase labour volume. Competition among employers increases wages until the final (boundary) level of labour product value. Thus, remuneration is shaped on the basis of the rule of extreme labour productivity (Golnau 2007: 28).

For an employee, economic labour value is the value of payment received. It is expressed by volume of goods and services which they can buy for their work. In case of employer, this value appears as a cost of achieving it. From their point of view, labour value exists only when, as a result, a product or a service is created and accepted by market. Only under such circumstances it

is advisable that employer would increase the specific outlays on employment. Demand for labour, alike demand for other production factors, is a derivative demand. Employers do not need workers just for their own sake, but they need them considering the work carried out, i.e. skills that employees possess. However, for an employer, a measure of their work is not their exertion but to what extent they contribute in creating a market value. Using the method, its demand for labour services is a derivative of consumers' demand for goods manufactured by them. An employer is only an agent who purchases the labour to sell it as final products. In natural economy, labour may be considered as a form of primitive money that was used to pay for articles purchased. In case of pecuniary-goods economy, remuneration is a price for work. Human resources as a classical production factor occur in a double role, i.e. as rendering the labour and receivers of final goods for payment obtained.

Every respective production factor, i.e. labour and capital, obtains remuneration proportionally to their final (marginal) productivity. Price is equal to production costs, i.e. the sum of payment and interests on capital, and owners of production factors obtain remuneration as a return for borne costs. Labour theory is, as a simplest approach, a special case of general value theory. Remuneration is a price for work. Price theory was transferred to wages issues. When indirect interferences do not exist, they may be determined by effect of demand and supply, the same as all prices (Barro 1997: 133).

The convergence of labour demand curves and labour supply determines equilibrium wages (price). Labour theory based on price theory constitutes a compact and logical theoretical construction. However, it is frequently treated as a set of abstract, unverified theorems.

Content-related doubts correspond, among other things, to the following problems: what factors form relations of goods prices as well as what is an appropriate measure of wealth? Classical scholars of economy did not appreciate, among other things, a relationship of goods prices on supply for these goods as well as relations among utility and supply.

Considering the increase of wealth as a factor in opportunities of increasing workers' lives level, the effect of labour division was overestimated, and the role of technical progress was underestimated. A controversial issue is also the fact that in theory of final productivity, from point of view of holistic value, none objective grounds were created to estimate the value of capital and labour as well as the issue of creating the value (Bartkowiak 2003: 50). Value theory based on labour considers only the labour as valuation factor and omits the role and meaning of the capital. Thus, it does not provide an objective assessment of production costs. Production factors are characterized not only by complementariness but also substitutability. This last feature is a controversial one in the sense that in a given enterprise, in a short period of time, substitution of capital and work is not entirely possible. Substitution curves are not lin-

ear ones but stepwise, whereas employment volume is determined by degree of usage of existing production power. At present, due to technological progress and automation, the direct share of labour contribution to the final products is lesser and lesser. Thus, it is difficult to determine the relation of extreme input of labour factor to extreme product growth.

The origin point of extreme productivity theory is demand for work, i.e. in relation to labour market problems, manufacturer side is emphasised. This theory explains employment aspects, it tells how much labour should be engaged in given labour rate, neglecting the supply side. Therefore, this is a unilateral approach.

Dilemma of this theory is the fact that employer is not interested in the extreme labour product. Every employed person provides approximate production volume, which is determined by an average labour productivity, i.e. manufactures approximately the same volume of products. The extreme productivity problem occurs when the issue of production change (increase or drop) is considered. It is worth to know how many persons are to be employed to obtain the desired production increment. After employing additional workers, the average productivity of all employed is an important issue. This value is decisive of average wages level, according to which every worker is paid.

Not having pretensions to indicate entire list of weak points of conventional wages theory, I would like to turn the readers' attention to one more problem. Microeconomic calculation serves the private rationality, and takes into consideration limited resources being at disposal of every economic entity. It does not take into account an absolute limitation of labour resources. And such situation may occur and relates to all employers. Then, access to limited resource under the condition of competition (ideal market) shall obtain the most competitive entity.

Conventional concept of labour market functioning at microeconomic level reflects the state of partial equilibrium, from the point of view of manufacturer, accepting supply factors as data. It is not out of the question that acceptance of given wages level in an enterprise is connected with existing of so-called hidden costs that occur in another domain, which are not included by microeconomic calculation. Rationality at micro level does not evoke macroeconomic rationality. In macroeconomic calculation it may be different and most frequently it is different. In nowadays technology, what appears is an absolute limitation of production scale (economy), which achieves its optimum when economic growth makes the created advantages and disadvantages equal.

Macroeconomic calculation is subject to preferences and social advantages. Division takes into consideration those, who do not take part in private advantages, for instance unemployed as well as persons of pre- and post-productive age.

In this connection, rationality of micro scale which is consistent with market logic generates negative outer effects in excess, in the form of unemployment and low wages, whereas in macro scale – positive effects appear in deficiency.

This relates, among other things, to the fact that equilibrium determined by market does not correspond to equilibrium of superior system, i.e. social system. Optimization of economy system does not lead to optimization of social system. Taking into consideration the logic and market functioning mechanism, a labour market as well, there is no place for equality issues or justice. One of the effects of market mechanism is an increase of income differences. Conventional concept of market functioning by Leon Walras, which includes labour market, creates problems in form of outer effects that market is not able to solve. Labour theory based on price theory, though it constitutes a compact and logic construction, is still an abstract concept. Neoclassic economy theory achieved significant perfection in determining the conditions of general equilibrium in the process of economic growth. It is distinguished by formal “elegance” and precision. The theory is based on certain assumptions, which are more and more frequently discredited by many authors. On labour market, mechanism that matches demand volume to supply volume by means of pricing mechanism operates within the limited scope. In practice, its characteristic feature is deceptiveness, lack of completeness and relative slowness. Within the scope to determine the wages level, market mechanism appeared highly deceptive (Stiglitz 2008).

3. People – a specific production factor, resource or a capital?

Market mechanism constitutes *spiritus movens* a guiding force, of wages theory. Traditional concept of labour remuneration based on prices subsystem, seems to be an inadequate solution in relation to contemporary concept on: work, theory that describes human resources (human capital) and models that explain functioning of the market.

On the background of classical resources (capital), human resources (capital) are of its own peculiar and significantly distinguish themselves. This is a peculiar resource, which has quite different “characteristics” than the “world” of things.

Traditional concept of human factor role was limited to the statement that wages are compensation for work, and growth of wealth is a result of investment in machines and devices. But machines and devices are manufactured by people; they were created due to human activities, due to their work. Human resources – understood as total number of employees in a given enterprise – actually decide how other resources shall be used and consumed.

One may indicate arguments for peculiarity of work (human resources) as a production factor: work has an extraordinary position in economy: work

cannot be separated from human being, who is its carrier and owner, whereas in case of any other goods, separation and transfer is possible; work is not a subject, in commonly assumed meaning, to “wear,” work cannot be arbitrarily reproduced as we may in case of any other goods; work contains “spiritual” elements, immaterial ones; work value has no direct relations to labour price, as it happens in case of other goods; wages reduction, and therefore the price, has no effect to demand increase, i.e. employment increase. Exceptionality of human resources is also presented in references (Jarmołowicz 2003: 11).

Economy references use at present the category of “human resources.” Taking into consideration various definitions, one may discover that human capital is the totality of features and properties personified in human being (knowledge, skills, abilities, health as well as motivation to work), which have specific value as well as constitute the source of future incomes, both for employee – an owner of human capital – and for organization that uses this capital under specified conditions. It is, at the same time, the resource which is a source of future satisfaction, wages or, broadly speaking, services of certain value, are human because they are embodied in human beings. We cannot separate ourselves from our own human capital – or, in other words; human capital is always tied to a given person (Domański 1998: 67; Rybak 2003: 15–20; Schultz 1981: 21). Pocztowski is right when he claims that people are not a resource but they have resource on their disposal, i.e. they possess the totality of features and properties personified in them that make it possible to fulfil various roles in an enterprise. Separate employees are owners of resource and they finally decide on engagement of this resource during work. This feature decides that enterprise has limited power over this resource. Thus, on the labour market, the transfer of ownership rights does not exist (Pocztowski 2003: 36).

Other features of human resources that the other resources do not have include such skills as: abilities of coordination, integration, judgement and imagination. Human capital value relates its usefulness for organization especially to the scope of creation of competitive superiority or reduction of potential hazards. Such strategic resources as information, knowledge and creativity are connected directly to the human capital. Besides qualifications, the knowledge about vacant posts, is indispensable. However, the attitudes related to risk are different, the level of disposable income, time that could be devoted to searching better job or effort invested in this process.

Human capital is not only number of employees in a given object but also information that a given person possesses, their skills and willingness to share with other. These two factors – knowledge and people – are connected today more closely than ever before. Potential of any of these elements cannot be used optimally without the second one. Motivation to share information constitutes an imperceptible barrier of system functioning and creation of value.

In definition of human capital one may distinguish quantitative aspects, i.e. number and structure of employment, as well as qualitative aspect of this resource, i.e. knowledge, qualifications, skills and some personality features of employees (Florczak 2007: 651). Together with growth of education level, new experiences, vocational qualifications gained, work carried out, mutual relations between people and ability to communicate – value of this capital increases (Król and Ludwicyński 2006: 154ff).

Examples given here do not exhaust entire list of characteristic features of human capital. However, it is worth to pay attention to the fact that traditional production factors (resources), such as land or material or financial capital, generate profit only when human capital (people) are able to actuate these resources. Only employees are gifted with ability to create values. All other factors – cash, credit, materials, machines and equipment – are, from this point of view, only an inertial contribution. They give nothing from the (very) nature of things and they cannot add, until any human being (human capital) does not use their potential, putting them to work (Fitz-enz 2001: 18ff).

In macroeconomic aspect, the issues of human capital could be considered in context of education expenditures, researches, number of students or persons with various education level. In endogenous growth models, the human capital has been introduced, and, as a matter of fact, increment of widely understood knowledge that is responsible for economic growth. Human capital is a carrier of technical knowledge and, as a production factor, brings its growth directly to production function, indicates constant increase of scale (Domański 2003: 76).

Differences among human resources and human capital, from the point of view of the analysed problems, are presented in Table 1. The criteria were selected arbitrarily.

Table 1. Comparison of human resources management and human capital management – selected criteria

Criterion	Type of management	
	of human resources	of human capital
Inspiration source (theory)	behaviours	economy
Key term	employee – employer	owner
Key questions for theory of organization and management	joining the resources	joining the owners of capitals (employees and employers)
Division of value	wages, remuneration, salaries	dividend, division of surplus, return
Action trends	development of organization as a whole in equilibrium with entities without engagement of employees	achievement of individual surplus and rules of division

Source: author's scientific description on the basis of Strużyna (2008: 6–7).

There is a lot of truth in a statement that both these concepts seem to be more a family of concept and their nature begins to remind a landscape of root-stocks. However, it is worth to pay attention to several differences.

Introduction of the human capital concept, to some extent, ennobles the human sphere, not degrading it only to a function of resources. Thus, people are not resources that enable the increase of economic capital, but they alone constitute the capital.

Management concept with human capital relates to – as many of economic theories – to rational character of effects of human behaviours. *Homo oeconomicus* makes rational decisions. In management of human resources, *homo socialisticus* is rather exposed. Division of subjects who operate in an enterprise is very clear. In management of human resources, this is a traditional division to employers (who employ) and employees (being employed). In convention of capital the roles are different. In relation to employees, the concept should be applied as follows: employer, investor, administrator. Other legal regulations govern the relationships among employers and other ones between employees and employers.

Controversial and hard to solve is the issue of essence of remuneration in both concepts. Managing the human resources, systems of remuneration fulfil the role that is equivalent to both parties symbolically in functions which are conventionally ascribed to wages, i.e. income and cost ones.

In case of managing the human capital, the term of remuneration needs to be defined.

The words (terms) dividend, return, multiplication, division of surplus are not adequate to rendering the work.

Homo oeconomicus stereotype emphasizes economic needs, i.e. appropriate remuneration.

In human capital approach, employment process requires not only material and immaterial justification but fair estimation and vocational development opportunities.

If human capital has to be preserved but not degraded, it has to obtain something more – not only appropriate remuneration (Strużyna 2008: 7–8).

Another controversial issue is who the management ideas with human resources serve to. In references, there are ideas that indicate to the fact that these concepts serve to employers so that to reasonably manage this expensive resource. Other authors, defining the human resources management, emphasize necessity to take into consideration the employer's and employees' businesses (Strużyna 2008: 8–10). If one considers that capital has its owner then the basic issue is how to unite and to manage it. In turn, while managing the human resources, the most important issue is to obtain the synergic effect. Describing the property state of a company from point of view of resource, its attributes are storage, stability and potential. The concept of capital is connected with:

continuous turnover, multiplication, therefore it has dynamic measure. The consequence of considering the human resources as carrier of capital is equivalent with the fact that it subjects to biological and moral depreciation. Loss of human capital may be a neutral process. Not investigating the disputes and problems related to management of resources or human capital, let us pay attention to lexical interpretation of these two concepts. Capital is interpreted as a value but it is also a form of a resource. This formula would denote that they are synonyms. Analogy could be found in accountancy. Resources have material form (for instance, company's assets) and their value is reflected as capital (liabilities). Simplifying, what is visible is the resource, that what is hidden is the capital. Capital is "concentration" of resource value. Referring this issue to human resources, we may assume that employee is a human resource, and his skills, i.e. what resides "inside him" is a human capital.

Appreciating the meaning of human capital we cannot overestimate its role in economy process. Effectiveness and enterprise goodwill, i.e. what is created in it, never results from action of a single factor but from interaction among all resources. Strength of a subject is determined by the weakest or improperly directed factor, regardless of the fact how strong is the subject in remaining domains or how strong it was in the past. If one of these domains is defective and improper, then the whole organization is not able to convert its potential effectively for development or growth of a value.

4. Functioning of the labour market according to P.A. Diamond, D.T. Mortensen and Ch.A. Pissarides's model (DMP)

In 2010, Nobel Prize in economy was won by economists who described the model of labour market functioning where frictions, i.e. mismatches occur. The DMP model refers to the following theories of the labour market:

- searching at the labour market according to G. Stigler of 1962 in microeconomic expression;
- matching at the labour market – macroeconomic approach;
- ineffectiveness of unemployment in the state of equilibrium (Nowak 2011: 135).

Labour market in the phase of searching, matching and finding of two entities faces difficulties that it cannot solve. Employers (vendee) and vendors (potential employees) activate mechanisms in the process of localization in order to meet each other. During the meeting, if the mutual expectations are not met, "market clearing" does not take place even within a longer period of time.

In the classical and neoclassical theory, employers (party reporting the labour demand) and potential employees (representing the labour supply) conclude transactions at the labour market in one moment and the conclusion does not generate costs. Equilibrium-related payment as the labour price is thus set automatically when demand equals supply.

The DMP model considers what is present in the economy practice. Friction phenomenon is present at the labour market, i.e. the process when demand and supply do not match harmoniously at once but this phenomenon takes place in course of time, whereas a part of demand is not satisfied by the part of available supply. Market with frictions can be characterized by the following:

- exchange does not take place automatically and labour market entities meet and negotiate the price and having it settled, decide to execute the transaction or search for more attractive transaction (processes are related with necessity of searching proper transaction parties);
- equilibrium price is closer to the monopolistic price than to free competition one;
- due to the costs of searching and imperfect information, goods (resources) of the same properties may have different prices; among other things differentiation of employees remuneration of the same qualifications and qualities occurs;
- one should consider external effects (increase of the search intensity by one entity may influence the intensity of search by other market entities, e.g. if someone accepts lower wages, chances of others for higher remuneration are lesser), which may lead to coordination failure at the market;
- there are many states of equilibrium possible at the market and attaining the most favourable state may require external intervention (Buttler, Orczyk and Szambelańczyk 2011: 127–130).

Entities at the market bear costs related to searching for transaction partners. Even though two parties contact each other, it does not mean that they will find an agreement within the scope of the transaction terms, especially related to remuneration level. Issue of not only effectiveness of searching for the best solutions (result of the made decisions, specified preferences of knowledge level) but the effectiveness of matching mutual proposals and expectations appears in this model. At the labour market, where various vendors (employees) meet many vendees (potential employers), finding such match requires time and effort. The basic problem is, among other things, the method of how companies and employees mutually decide whether they should match or continue the search. In case of matching, determining how the benefits from starting an employment relation are divided to wages for employees and profit for company.

One of the situations described in this model is a characteristic of persons searching for employment. Whether an unemployed shall undertake a job or

not, a reasonable calculation of benefits decides which results from both states, i.e. being unemployed or employed. The discounted value of being unemployed consists of, among other things, the amount of unemployment benefit increased by certain expected bonus by virtue of undertaking a job (the larger the number of abeyances is in relation to the number of unemployed persons the bigger the bonus). Remuneration that could be received is reduced by a potential loss related to the risk of losing the job determines the level of employment. There are no significant problems with calculation on the supply part of employment: remuneration or unemployment benefit. However, the issue related to the bonus of being unemployed and potential risk of losing the job is debatable. Thus, it seems that bonus by virtue of undertaking a job is executed when it exceeds the benefits from losing free time value or performed house jobs. In turn, potential risk of losing a job depends, among other things, on the relation of abeyances number to the number of unemployed persons, i.e. the probability of finding a job.

Employers make decisions on hiring based on the expected bonus (benefit) related to employment, reduced by the costs generated by the abeyance. This is – so-called – discounted value of abeyance. This value is compared with the current value of filling the abeyance and is determined by the surplus of value generated by an employee over its remuneration, reduced by the potential loss sustained by companies in case of terminating the employment contract.

New abeyances appear when finding suitable employee is easy. High costs of work and high level of risk associated with termination of a work contract with employee reduce the number of job offers. Assuming that the expected bonus from employment is equal to the value generated by an employee exceeding the remuneration, the difference between the discounted value of abeyance and the current value of filled abeyance is determined by comparing the costs generated by the abeyance with potential loss sustained by an employer in the situation of terminating the work contract.

The amount of remuneration is determined during negotiations between an employer and a person applying for a job. Successful negotiations generate annuity that is divided between an employee and employer. The division proportions depend on the parties negotiation efforts. The negotiated rate is influenced by employee effectiveness and the period of being unemployed.

The DMP model allows analysing the influence of specified solutions within the scope of economy policy, social policy related to costs of hiring and dismissing, act on the minimum remuneration, taxation or unemployment benefits.

Economic references present models that consist in the assumption that while making the decision about hiring, employees consider not only the remuneration rates, but other factors as well. These can be the type of performed tasks, position within the company, selection of new work place, i.e. issues of

so-called threshold payment, access time to work place, work place surrounding or working hours. It is obvious that higher levels of social distribution, i.e. providing high remuneration, are taken. However such levels exist only when there are employees that accept the work place at lower levels of remuneration. The presented mechanism at the level of micro is also present in the macro scale, at the level of the whole economy. The remuneration policy task is to create such conditions where all employees, in spite of differences in remuneration and productivity, perform the designated tasks.

5. Institutional and behavioural economy – basic findings

At different levels, in different fields and segments of the labour market, the method of determining payments is deprived of nameless market objectivity and becomes the effect of influence of state, company or organized groups of employees (Ratajczak 2007: 134). Large companies and even whole disciplines and sectors of the economy may to a larger or smaller extent determine the level of remuneration, their increase, and well-organized employees, effectively enforce payment requests from employers.

Currently, the level of payments at a company in macro scale is determined by an economic trend, situation at the labour market and assumed institutional solutions that determine the executed policy within the scope of distribution. Economy policy, in particular the one related to payments, is an action that strengthens the benefit-bearing factors and balances private and public as well as social and economical goals and limits the negative effects (North 2006: 554). It is a determination of such limiting conditions within the scope of which it is possible to shift costs and benefits (Wilkin 2005: 9–29). In the economy policy, the exogenous economic incentives are influenced by political and economic institutions, i.e. the adopted solutions that regulate functioning of the labour market on the demand and supply side, for example, labour law, role of labour unions, level of minimum payment, solutions within the scope of social insurances and monetary policy (Stiglitz 2005: 57).

They include the form of government, employers associations and different forms of regulations (World Bank 1997: 30). It is obvious that meaning of the aforementioned institutions is controversial, especially when it comes to their economic exogeneity, i.e. if and how would they react to economic incentives and how do they change in time. Disproportions of distribution may constitute the effect of market relations extension but this can also be the redistribution result of the function accomplished by the state. Optimum solutions are these that provide socially acceptable and economically justified differentiation and

propagation of wealth. The problem is that the state cannot determine the economically justified level of remuneration. Such mechanical substitution of the market with the state operation does not change much, because the market may fail to the same extent as the state, culture or other institutional element.

In the world of imperfect knowledge, there are no ideal solutions. Market imperfection is not the same as its defects, and imperfections of the state are not its disabilities or faults.

Classical economy offers ready model – the theory in which logic is its trump card. This is a complete and coherent theory. Representation of payment as the labour price is precise. Even though, it seems that it is necessary to adopt significantly broader outlook at the labour market (economy). Interesting and original insights are proposed by behavioural economy (Mullainathan and Thaler 2000: 2; Eckel 2007: 842; Camerer and Loewenstein 2004: 7ff). It is not as precise as classical economy. It lacks precision brought by mathematics and offered by traditional economists, but it can be its complementation.

In the classical economy, the assumption of rationality of the decisions made by entities operating at the market is a paradigm. Profit is the motive of the made choices. If the market transaction participants behave rationally, the market is “governed” by the laws of logic. Behavioural economy rejects the thesis that people are driven only by profit while making the decision. Notions of Adam Smith presented in two the most important works, from the point of view of economy, cannot be disregarded: *The Theory of Moral Sentiments* of 1759 where he described human tendency to minimize the risk and overprice own possibilities and *An Inquiry into the Nature and Causes of the Wealth of Nations* of 1776 (Polowczyk 2009; Polowczyk 2010: 493–516). Decision about the amount of remuneration paid by an employer or taking a job by an unemployed person or persons entering the labour market, may be determined by many factors which cannot be valued and which may influence the made decision. Assumption about the rational entity that makes some decision is not always true. People’s motives are very different. The problem is the transition from the “world of theory” to reality.

Behavioural economists offer a set of observations that, however true, important and thorough, do not compose one coherent wholeness (theory). It is too soon to reject the theory of remuneration (payment for work) as the work price. The problems of remuneration should include new findings that were omitted by traditional (classical) economy. In economic reality, decisions made by the entities at the labour market are justified not only within the field of economical rationality, in the relation “does it pay off or not,” but may be based on emotions. Employment of a few additional employees or dismissal some of them, raise or reduction of wages may result from the conviction that favourable or unfavourable circumstances approach. Entrepreneurs who follow the principle of rationality, also make mistakes. We may determine the ex-

pected benefits or borne costs only with some probability. Selection decisions are made on the basis of the fact what we expect and not on the things that will actually happen. It is alike with decisions made by employees. Their rational behaviour does not have to have the economic implied meaning. While choosing the work place, they consider not only the level of received remuneration but other criteria as well, e.g. level of work safety, scope of responsibilities, gained knowledge or amount of free time. Many decisions cannot be described based on the rationality criterion. The situations mentioned above and, for sure, many other ones cause that connection of egoism with intellect and emotions impedes making rational decisions by entities concluding transactions at the labour market. Primary instincts that the mind do not control are often driving force of markets.

6. Conclusions

In author's opinion, economy in Poland is on the stage of competing as regards processed product quality and high output of production factors achieved due to employees' qualification growth and their wages as well as investment growth and their efficiency. From among many factors that determine competitiveness and economic development, human resources play exceptional role (human capital). Work and their remuneration satisfies a lot of needs, provides funds for living for us and for our family, provides feeling of safety, dignity, sense of life, prestige and satisfaction. Mechanical transfer of price theory to remuneration seems, to be at present, a narrowed and insufficient solution. Neglecting the discussed weak points and weaknesses, the strong argument is the output of science on human resources management (human capital). This theory indicates to the need to see an employee within a broader measure, not only an economic one. This aspect is important but not the only one, which fact finds additional confirmation in functions that employment and remuneration meet. Market cannot be a predominant arbiter within the scope of division of created value. There are no perfect solutions in the world of imperfect knowledge. Market imperfectness is not the same as its weakness, and imperfectness of state is not its deficiencies or faults. Potential employees cannot find employment because this action generates various types of expenses. Market and government (institutions) operate with delay. When solution is found, it appears that circumstances are different. And this way, one enters into the next stage of searching and matching.

The author's recommendation, only to be mentioned in this paper, is that remuneration, rate of change, level and position relationships in an enterprise

could become elements of business philosophy that is run with responsibility – CSR (Corporate Social Responsibility), SRI (Socially Responsible Investing). Responsible management is multiplication of property of owners, who tend to profit growth preserving, at the same time, the principles of social responsibility and accomplishment the social important goals. Companies, that, among other things, take care for employees' rights and respect the aspirations for economically justified remuneration growth. Effects of economic success are divided in proportion in relation to investments incurred.

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Feminist economics versus managerial phenomenology

Abstract: This article predominantly aims to seek for an answer to the question: Does feminist economics influence positively the value shaped within the architecture of management? An attempt to answer the query posed was possible thanks to an analysis of a person's motivational systems.

Key words: feminism, phenomenology

JEL code: Z100

1. Introduction

The structural solution of the organization determines the efficiency of management activities aided by human systems.

The identification of problem is made by a management structure and by identification of the efficiency of action transfer in the network – the network is rebuilt.

At first, it is crucial to distinguish between notions that are very close in meaning: femininity, economy being, value. A person searches for the value in the life, however, by purchasing – they buy themselves.

Therefore, the value-based approach has a broader meaning than the feminist economics of the femininity, economy being.

As far as economic aspects are concerned, being is reflected in value perceived by a man, and simultaneously being within the acceptance limits of a man.

The aim of this study is to present a subjective and objective understanding of the economics of gender and its impact on the management of the organization.

Research methodology is that of a digressive polemic, drawn through the origin of feminism and its impact on the economics of being, governance and social change.

Sequence analysis of the problem have been routed through: determinants of an individual's development, synergy of cooperation.

The paper ends with conclusions concerning the impact of changes in gender perceptions, determinants and development unit for the management of an organization.

2. Determinants of an individual's development

The original human nature was not like the present but different. The sexes were not two as they are now, but originally three in number; there was man, woman, and the union of the two [...]. Terrible was its might and strength, and the thoughts of their hearts were great [...].

(Platon 1975: 83)

Feminism is a collective term describing various types of approach to life, political actions, and also deliberations concerning social and cultural philosophy, whose common determinant is the strive for women's empowerment (Hartman 2009: 58).

Inherent ideas – genetic rationalism, also called nativism, ascertains there is an inherent knowledge. It is possible thanks to inherent ideas. They are stored in mind, exist independently of experiences and are cognitive tools at disposal of every individual (Hartman 2009: 102).

For example, when a law is formed concerning a phenomenon, the mind refers to certain criteria, such as simplicity, and the mind is capable of feeling that it has found the law (Copleston 2000b: 126).

Feministic research turned away from the postulate to consider the history of the world and knowledge so that it would factor in gender category towards the cyborg metaphor (Gajewska 2008: 86).

The elements shaping the perceptive understanding of reality could be described in a variety of ways, nevertheless three of those are worth particular attention in terms of problem recognition:

- cognitive perspective through Maslow's pyramid;
- ontology and ambiguity;
- social role of gender and its capabilities in the area of social and economic considerations and their origin – religion, culture.

Thus the world can be perceived in three dimensions:

- livelihood,
- ethics,
- cognition.

It is not the gender that conveys our capabilities and status, but more likely the social class to which we are assigned.

At the same time, predominantly under Marxist influences the postulate is formed, compelling historians of philosophy to factor in social and political background of an investigated period and to explain impact of social and political determinants on development of the philosophical thought. However, regardless of the fact that in order to confine the history written by oneself within reasonable limits, one should pay attention solely to the philosophy, as opposed to events constituting social and political development (Copleston 2000a: 13). All the more, because culture causes suffering, as it imposes restrictions and constraints on our behaviours (Kloch 2006: 31).

2.1. Individual versus social and cultural system

Praxeological tautology and cognitive initiative prove that no human is comparable to other, there is no equality between humans, and apart from physiological level, human beings have different views and multi-variant needs (Figure 1) (cf. Gajda 2008, Grabowski and Słowikowski 2009, Herzfeld 2004, Taylor 1911).

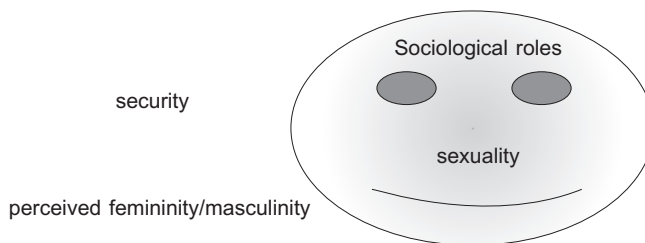


Figure 1. Valuation rings – own development based on Maslow (2004, 2006)

Balancing everyone into equality sparks social and psychological consequences (cf. Kociuba 2010).

For centuries, women have been associated with the private sphere, i.e. home, family and bringing up children, whereas men with the public sphere, i.e. professional carrier, power, decision-making. There is a stereotypical perception that the women's duties are motherhood, children caring and

keeping the household, and the men's duties are providing livelihood to the family (Lisowska 2008: 75–76).

When in the Stone Age, it could hold water because food without extra maintenance costs was sufficient to survive, nowadays it is not justified any more (cf. Gajda 2008, Siemanowski 2005).

The question, “which came first, the chicken or the egg,” translates into does a man earn to little, so a woman has to compensate for deficiencies, or does a man earn to little because a woman's maintenance is expensive and thus has to work?

In the Stone Age, a valuable male would display a relevant genome, which would allow him to overrule the herd and provide nutrition to his females. Women dysfunctional in groups died, failing to pass their genes onto their descendents. Natural selection would also apply to homo erectus males (cf. Szpakowska 2008).

We should therefore rejoice that “theoretically” we inherited an optimum genetic code.

Up to a certain point in human history, such statement would be very much justifiable indeed, but historical selection eliminated intelligent and opportunistic units, hence that not necessarily is the case.

When the “tipping point” took place and the aspect of biological genome ceased to matter?

“Gender depreciation” – to a great extent describes the signs of crisis in perceiving biological, social and cultural roles (cf. Ostrowitianow 1955).

Is the age of slavery, feudalism, collapse of “Polishness” and fall of nations suggesting gender ceased to matter?

2.2. Underclass issues

The underclass issue may originate from:

- Cultural presence of units and groups, whose customs, values, norms, cognitive standards or way of perception differ sufficiently from dominant culture of the environment to impede communication processes with the environment and using its institutions, i.e. successful social participation.
- Deficit of status-related rights, to which members of certain community are entitled or deficits of possibility to use those rights. (Radziejewicz-Winnicki 2004: 18)

The feeling of coherence (physical, mental and social health) is real, provided mutually consistent factors occur:

- comprehensibility – perception of information and adequate reality evaluation;

- controllability – identification of relevant means determining self-reliance under threat;
- sensibility of emotional and motivational nature. (Syrek 2004: 31)

Human as a cognitive entity should be perceived as a social being, whose “functioning” and perception are linked to the social life. Thus his functionality is dependent on social considerations and functions, those in turn are environment’s variables over time.

The depreciation issue should therefore be searched for among sociological and economic transformations constituting the historic analysis and being a nomothetic science. Only after laws determining “that status” are explored, particular processes of the status quo (particular life situation) could be described based on idiographic sciences. However, social anthropology should comprise the entire spectrum of variables determining the investigated process – the assumption based on the following fact: human is a social, economic, political being and the social reality is a historic reality endangered by structural transformations.

In our case the analysis is even more complex, as it touches on multi-cultural transformation of the country against the backdrop of unification process of global economy and culture.

Deliberations thus allow to conclude that there are no independent systems. Processes determining depreciation are dependent on economic, political and cultural variables – which have to be analysed in a continuum – and then verify the characteristics of social groups (classes), based on a concrete social formation.

There are multiple reasons behind degradation, often overlapping. Nevertheless, four fundamental reasons of such state of affairs can be distilled:

- material factors,
- situational factors,
- family factors,
- institutional factors.

Analysis of the listed reasons behind social degradation in context of transition from socialism (lingering on to this day opinion of “attentive country”) to present times is a salient example of weaknesses of certain “social groups,” whose identification is indispensable in problem interpretation. Despite the “structure” of capitalism being the cognitive objective, it is necessary to explore suggestions interweaving Marxist research into capitalistic formation:

1. Shifting from general statements to actual research, over the course of which specific for a particular period regularities are extracted.
2. Comprehensive research, featuring – not exclusively though – participation of sociology, which is aimed at revealing interrelations of various aspect of social life.

3. Revealing in investigated social arrangements manifold tendencies and contradictory aspirations, which once explored give not so much an ability of pitch-perfect foreseeing future developments of events, but it determines areas of possible and purposeful actions of people who want to consciously and of their own choice participate in processes of social transitions (Hirszowicz 1964: 79).

In case of the last suggestion, the problem of dual nature emerges (Figure 2):

- psychological nature
- nature of real possibilities to contribute.



Figure 2. Individual versus society

Source: own development based on Carr (2004: 134–137)

Self-consciousness of an individual belonging to a particular group can be enunciated through a social bond expressed by a system of psychological attitudes shared by individual members of a given community, characterising their attitude toward other members and to society as a whole (cf. Bar-On 1997).

The 3B syndrome (standing for Polish words *bezrobocie*, *bieda*, *bezdomność* that mean unemployment, poverty and homelessness, respectively) can be tackled by subject-based and/or entity-based approach. The subject-based approach to the 3B syndrome is of economic nature, which subject to entity-based approach and valuing, adopts the form of a social illness (cf. Kwiatkowski 2003: 397–398).

Hence one can ascertain – in a great simplification – that an individual's developmental options in areas: family, partnership versus economic development, can often determine ambivalence of feelings and reality perception (cf. Kowalska-Napora, 2003: 25–34, Jaros and Kowalska-Napora 2005: 49–57, Kowalska-Napora 2005).

Reality testing is an ability to evaluate dependencies between subjective experiences and objective, external situations (Carr 2004: 135).

If effective action is conditional on happiness and optimism (cf. Bar-On 1997), we find the conclusion of these deliberations in subjective perception of freedom, security and self-fulfilment.

Of course, every classification and generalisation of judgement requires determining a centre point, where the evaluation would be relatively objective – assumed by the individual enacting and evaluating law.

Generalisation of harm expressed as categorisation of backwardness and depreciation of an individual, lowering its developmental and livelihood options can affect both women and men.

Hence, upon deciding about the form of participation in society, the research subject should cross-compare all benefits and costs, not only expressed in money, but also those which would allow it to build a future perspective of growth (cf. Samuelson and Marks 1998: 30).

2.3. *A priori* Hap entropy of a system

A system should be open and promotion of opportunities great, conformism towards official values is a dynamic, functional factor. If people have great ambitions and aspirations but poor perspectives to fulfil them, we have mass frustration and growing dissatisfaction on our hands, which distort the system balance, and can be considered an upsurge of the growing depreciation phenomenon.

The developing of depreciation can be illustrated through analysing the following rules:

- the rule of revealing in those ideological ideas real conditions, aspirations and material needs of individuals operating in the material world;
- the rule of revealing in notional distortions and intellectual limitations objective constraints occurring within the scope of social relationships;
- the rule of determining the class character of tendencies to elevate limited historical aspirations and particular public interests to the rank of commonality in the sphere of ideas. That class reference is important, especially when a widely accepted by certain classes social organisation falls into contradiction with objective development rights.

Hence the equilibrium system manifests itself with transformation (formula 1), (Hubert 2000: 25):

$$NT \Rightarrow NI \quad (1)$$

where:

- NT – thermodynamic negentropy (understood as: vital energy);
- NI – informative negentropy (self-enlightenment, cognition, “intelligent” being).

Then, under equilibrium (formula 2), (Hubert 2000: 26):

$$HS = S \quad (2)$$

where:

HS – human;

S – social system.

A priori Hap entropy of the HS system resembles S over time (formula 3), (v.s.):

$$\text{Hap} = p_1 \log p_1 + \dots + p_i \log p_i + \dots + p_n \log p_n \quad (3)$$

where:

p_i – is an *a priori* probability of a particular *i*-th occurring in the system and related to it *i*-th output

The number of components in this sum, depends on the number of system's degrees of freedom.

Compared to the above-mentioned, the depreciation of an individual and its existential state can be expressed as $NT = NI$, limiting the number of Hap degrees of freedom of the HS system, where disequilibrium occurs (formula 4):

$$\text{Hap}(S) \gg \text{Hap}(HS) \quad (4)$$

We can indirectly explain the above with the ensuing fact that capitalism did not emerge as a historic necessity, as the Marxists maintain, but it also does not have to collapse abruptly, because there is no evidence for it losing its stamina (Stankiewicz 2007: 259).

It is worth to bear in mind that value is a relative notion; and object's value translates into quantity of the other, for which the former is being exchanged (Mill 1965: 77).

In order to study determinants of general managerial notions – the most suitable thing will be to present it as a processual approach to value system's changes in the continuum function. The square one for above-mentioned analyses is the value pyramid model – Figure 3.

A method to understand the mechanism of fear is to ponder evolutionary demands (Pinker 2002: 419), where each of us constitutes a certain node in dependencies network, which is creating interactions through perception and exchange of information and values.

Creating new relations and choosing them determines success in our life.

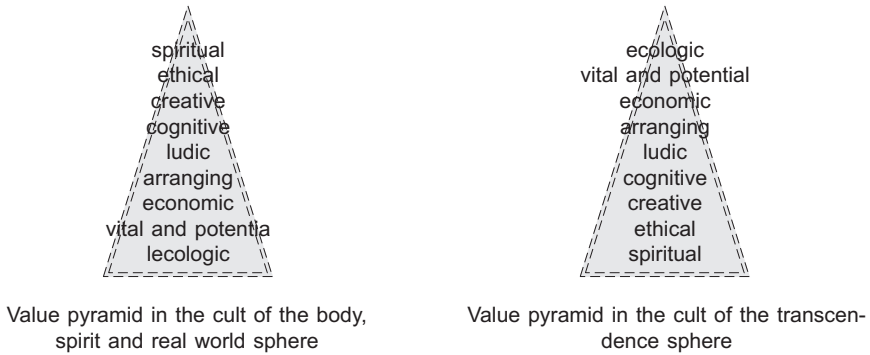


Figure 3. Pyramid model of values

Source: own development based on Tulibacki (2003: 39).

Spatial network configuration determines efficacy of actions within it. The degree of an individual's adaptation in the network to the entire structure can be defined as:

1. Adaptation through tracking the functional adaptation function (formula 5), it becomes feasible by means of mutation operators (Arabas 2004: 25):

$$X''_i = X_i + (\beta (\Phi_{\max} - \Phi(X)) + \gamma)^{1/2} \xi_{N(0,1),i} \quad (5)$$

where:

- X''_i – new adaptation feature;
- X_i – the feature before tuning and adaptation;
- β, γ – chosen decisional parameter (e.g. selection of value generating method);
- $\Phi_{\max}$ – value estimation of the adaptation function in global maxima, which can be understood as the extent to which network locations and created interactions are consistent with other participants of the network.

2. Hence, we can draw far reaching conclusions from the permutation of flowing through approximation independent variables from the dependency (formula 6), (Arabas 2004: 95):

$$\mu D(x^*) = \max_{x \in X} \mu_D(x) \quad (6)$$

where:

- $\mu D(x^*)$ – decision on selecting relocations dependent on optimum, data-based estimation of place object parameters (node's) and corresponding relations $\max_{x \in X} \mu_D(x)$

Putting together formulas 5, 6 and by referring to non-hierarchical cluster analysis we obtain the optional tree of shape determinants, as in Figure 4.

According to Arabas – depending on positioning, we consider terminal nodes (a node which has no child nodes) and intermediate (non-terminal). Ter-

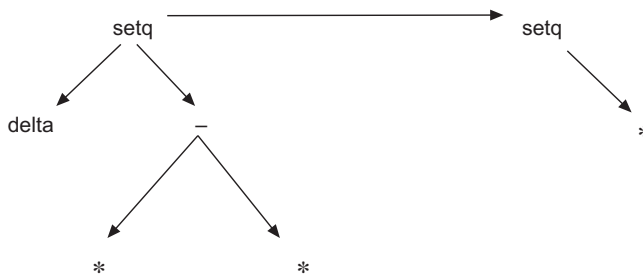


Figure 4. The representation arborescent setq-fidelta – a brief introduction. Own development based on Arabas (2004: 97)

minimal nodes contain elements, which are autonomous and they can adopt fixed, variable values or parameterless functions. Non-terminal nodes represent functions or operators (Arabas 2004: 95).

3. Synergy of cooperation

Dynamic involvement is a view that time and mutual relations between people coerce management in rethinking traditional views towards continuous, abrupt changes.

Watson perceives managing as a simple issue of running an organisation in such a way that various people, if they want something from their organisation, would support it strongly enough to make it last long (Watson 2001: 18).

The above-mentioned statement can be found among Burns and Stalker rules concerning a limited organisation model (Burns 1978), (cf. Bielski 2004: 138):

- Using wide specialisation, aimed at achieving organisation's overall goal, as opposed to specific goals, and constant reformulation and adaptation of tasks to accommodate changing needs through improvements.
- Versatile qualifications are preferred, enabling deploying knowledge and experience adequately to pursued overall goal.
- Coordination by constantly adapting organisation's members to existing conditions and various interactions.
- Generalisation of the notion of organisational post and organisational role allowing to exceed the scope of competences.
- Putting a considerable emphasis on internal stimuli.
- Case-based approach to locating centres of power (in the form of organisation's member or a team who can ensure best solution to a given problem).
- Introduction of multilateral (multi-directional) interaction and information flow systems.

- Treating information as knowledge about decisional situation or an advice on how to solve a problem.
- Organisational participation predominantly drawn on involvement in achieving organisation's goals, and to a lesser extent on loyalty and obedience.
- Imposing higher significance on norms and community values, prestige on relations with environment, as opposed to intra-organisational norms and values.

We are the third gender, because in household economics we find Plato's message.

Relations and interactions are a game and fight for the middle class, which does not exist. We emerge from the cave, more self-conscious.

In the household economics, also known as feminist economics, we shall never forget that Maslow's pyramid identifies as our cognitive objective abstract values – love, faith and freedom. Morgan proposed in that respect four rules necessary to properly perceive an organisation and create its existence: minimum critical specification, redundancy features, learning, necessary diversity (Morgan 1997: 111).

The modern generation of **decision aiding systems**, as Keen (1950) points out, thanks to multi-perspective data perception (including unreliable, incomplete data) and the ability to handle qualitative knowledge representation, are capable of translating that information to information useful in the decision-making process.

Simon (2007) views decision-making as organisation's main function, emphasising existence of a wide range of decisional problems: from easy, resolvable by means of "programmed" actions (repeatability, routine, well-defined structure) to hard, "unprogrammable" ones (badly-defined structure requiring development of novel solving methods). Decision-making is not an easy task, because high quality of decisions is desired in order to achieve organisation's increased performance and better results and faster solving of managerial problems.

However, those problems are usually complex, poorly structured, plus the decision-maker has to respect opinion of many stakeholders, both individual entities and groups.

Predominantly they are characterised by occurring uncertainty – both at the stage of interpreting the gathered source data and expected outcomes of pursued decisional variant.

Malhotra expressed his critique of **technological approach** to representation and management of knowledge characteristic for the lifecycle of intelligent systems in force (information and expert systems in particular). It seems as if a clearly defined goal of technological approach is better in predicting future (and consequently working on future decisions) based on historical data and experiences. Knowledge representation – in line with this approach – is extracted

from databases in the following stages: historical data analysis, historical case study, generalisation leading to formulation of rules (Malhotra 2000).

Malhotra (2000) thought that what the individuals responsible for decision making really need, is not “future forecasting” but “anticipating surprises”.

Various takes on dimensions of actions’ efficiency can be found in reference literature, which are based on resource and positional potential – expressed with material, technical, financial, informative and most importantly – human value (see Porter 2006, Kożuch 2009: 69–78).

The most important of those can be presented in form of the following diagrams (Bielski 2004: 113):

- final goals – a means and their utilisation (the closest to the goal-oriented approach);
- input efficiency – transformation efficiency – output efficiency (the closest to the system-based approach);
- economic efficiency measures – behavioural efficiency measures (containing values of organisation’s social subsystem);
- reaching goals: maintaining organisation’s integrity – adaptation;
- production – performance – morale – adaptation – development.

Thus, the multi-point approach becomes important, not only through integrated management systems, but above all through flexibility of decision and action taking, adequate to organisation’s continuous internal and external changes (cf. Obłój 2007b, Rampersad 2004).

3.1. Human capital management versus the economy

We live in times of knowledge economy (Drucker 2004, 2005), where obtaining and skilful utilisation of knowledge determines organisation’s successes, even more so than its resource and positional potential (Kopycińska 2008, Obłój 2007a, 2007b; Porter 2000, 2006).

From organisational sciences’ point of view, above all the narrow perception of enterprise’s organisational structures should be abandoned and the attention shifted to broadly defined structures and shaping them in a manner that they exceed the limits and comprise business structures. Those structures earned themselves the name of organisational architecture or business architecture.

Up until now, Polish reference literature did not systemise the knowledge about organisational architecture. The architecture was defined as a network of relative contracts inside or around companies.

Relations between the organisation and its employees are creating the internal architecture and relations with suppliers and clients – the external architec-

ture. Network architecture composes of relations within groups of similar commercial activity (Kozuch 2007: 259).

Organisational architecture increases quality of individual inputs in a triple manner (Perechuda 2005: 230–250):

- creation of organisational knowledge;
- building cooperation ethics;
- implementation of organisational routine.

Indicative of hardship in unambiguously systematising issues of organisational architecture and its consequences for managerial processes, is simultaneous occurrence of many architecture types in an organisation, e.g. (Kozuch 2007: 259):

- information architecture – own infrastructure and information networks, and those outside the organisations but used by it, applicable interpersonal communication systems, inter-departmental and inter-organisational;
- social architecture – quality, quantity and structure of human resources, requirements imposed on applicants, adopted codes of conduct, values shared across the organisation;
- financial architecture – financial infrastructure, balance sheet structure, procedures of financial reporting, processes of gaining and employing capital;
- technical architecture – own technical and technological resources, and those which are outside the organisation but used by it;
- strategic architecture – currently used – both own and foreign – potentially key factors for organisation's competitiveness, concepts, strategies, tools enabling contending for the future and widening industry's competitive frontiers.

Defining business model can draw on the model of four key questions (cf. Kim and Mauborgne 2005):

1. Which variables excluded from typical business models could be added to the new model in order to create a new, innovative strategy?
2. Which dominant in other models variables are viewed as obviousness and necessity, thus could be eliminated from the new strategy?
3. Values which could be decreased significantly in new strategy, below industry standards or even beyond.
4. Values whose variables could be decreased or increased in new strategy, so that they would significantly exceed industry standards or even beyond.

In terms of strategy and simple rules, Oblój derives the following premises (Oblój 2007a: 151–166):

- The essence of competitive advantage is ability to take advantage of transient opportunities.
- Effective contending on modern markets requires innovative strategies.
- Strategic plan should:

- add value (permanent advantage);
- be consistent and repeatable;
- be difficult to imitate.
- Innovative strategies of taking advantage of opportunities are based on a few core processes and simple rules which regulate them:
 - first are the executive rules (how-to rules), which core processes are orderly in the organisation and which are the main decisional criteria;
 - second are boundary rules, making distinction between worthwhile opportunities and those which the company should abandon;
 - third are rules prioritising importance of strategic goals;
 - fourth set of rules concerns making decisions within a timeframe, to synchronise decisions and actions taken with particular opportunities occurring in the environment;
 - fifth set of rules concerns criteria of abandoning actions.

Based on the above-mentioned, Prahalad derives guidelines for creating consistent and permanent business models by organisations (Prahalad 2005: 163–165):

- everything is an opportunity;
- experiment and learn;
- maintain balance between centralisation and flexibility.

Starting from uncertainty states, pondering complexity through Zadeh's linguistic forms, or implementing the above-mentioned using every possible intelligence – the solution and its accuracy are dependent on quality and speed of information flow, its transfer – and consequently on utilising efficiency (Kacprzyk 2001, Juran 1988).

Model approach to the aforementioned assumptions can be considered in form of conceptual flow visualisation.

Morgan proposed in that respect four rules necessary to properly perceive an organisation and create its existence: minimum critical specification, redundancy features, learning and necessary diversity (Morgan 1997: 111).

Thus, the rationale underlying all human actions should be rationality perceived as a feature characterising purposeful actions distinguished by choosing a relevant aim of action and beneficial relation between consumed outlays (work, capital, energy, information) and the level and quality upon its achievement (cf. Brzeziński 2002, Gwiazda 2002, Michalewicz 2003).

There is a possibility to derive deciding factors for changing process parameters through experimentation, thus shaping the final outcomes expressed by the product effect. Translating the language of relocation to deriving boundary process parameters allows to generate those fundamental factors, whose verification will contribute to obtaining particular product patterns (cf. Bohn and Jaikumar 2004, Hammer 1999, Kasiewicz 2002) (Figure 5).



Figure 5. Specification of boundary values and their approximation

Source: own development based on Upton (1998: 12).

An organisation's efficiency and synergy level are the main verifier and estimator of taken course of actions' validity, which allow to construct a model of optimum process management (formula 7):

$$p^{n,m} = f(C, D) \quad (7)$$

where:

- p – decisional space in variable areas n, m (space $p^n - p^m$);
- n, m – degree of variability;
- D – decision – as reaction;
- C – experiment time.

Experiment space, thus determination of boundary process parameters shall be strongly consolidated with deriving the degree of variability in which an organisation is, which should single out the right decision in terms of created social system of an organisation.

Carried out analyses of the decisional process justify that gender distinction in management is groundless, to a similar extent as claiming assignment of gender-specific features.

Feminist economics, whose demagogy draws on identification of unjustified and characterological features, finds its confirmation very much in household economics (Figure 5).

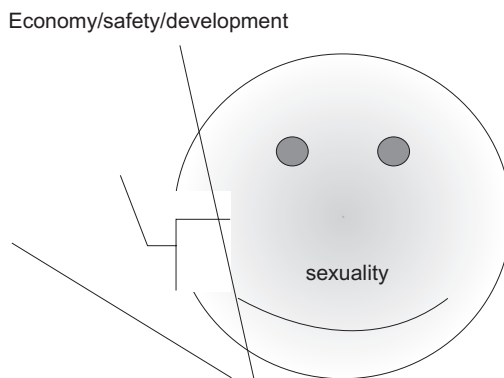


Figure 5. Gender depreciation versus economic values

Source: own development.

4. Conclusions

Literature studies carried out and polemic explications allow to identify the following conclusions:

1. A modern organisation stands in with a chance to succeed once it factors in global opportunities and threats based on rules of dynamic involvement.
2. An organisation is a social system based on household economy and participation in synergy of the value added.
3. A legally restricted social system operates under the same principles, by which a social unit is driven.
4. Sexuality develops image of feminist economics, which is underlaid by rational definitional premises – as long as it draws on household economy.
5. In modern management architecture the gender demagoguery loses ground, and features creating an individual's value are of unified nature, as opposed to gender assigned.

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Behavioural norms as an element supporting creativity and innovation in small and medium-sized enterprises

Abstract: Organizational culture plays an important role in supporting the creative processes because it can promote or hinder innovation-enhancing norms. Innovative small and medium-sized enterprises tend to develop culture, which accentuates and rewards values and norms that support the younger generation and implementation of new ideas. Such a system encourages everyone in an enterprise to develop original and useful proposals. They promote innovative ways of solving problems and finding solutions. Over the years, researchers have documented a variety of norms that consistently promote creativity and innovation in organizational settings. The aim of the article is to present the organizational culture, especially the innovation-enhancing norms as an important elements that promote creativity and innovation in small and medium-sized enterprises. The paper was elaborated as a part of VEGA project 1/0654/11 “Innovative small and medium-sized enterprises as a part of knowledge-based economy in the Slovak Republic.”

Key words: behavioural norms, creativity, innovation, organizational culture, small and medium-sized enterprises

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1. Introduction

In the last decade managers and theoreticians started to recognize that one of the main driving forces behind creativity and innovation is the organizational culture, especially the innovation-enhancing norms that promote creativity and

modernisation (Andriopoulos and Dawson 2010: 257). It can be stated that the components of organizational culture (shared values, beliefs and behavioural norms) are key in promoting the generation and implementation of new and useful ideas.

Culture exists at two levels, namely the surface (visible) level and deeper (less visible) level. The surface level includes elements such as audible and visible patterns of behaviour (physical artefacts, such as buildings or décor). The deeper level of culture relates to the values that a group shares and norms that establish the behaviour of the members of the group (Grieves 2010: 185). Once values have been established within a group, the norms stemming from them allow members to understand the types of behaviour expected in different situations.

In accordance with shared norms, staff will decide on whether creative and innovative behaviour is a part of the internal environment in which small and medium-sized enterprises operate. Moreover, the dominant values, beliefs and behavioural norms, which are incorporated in the management practices of the small and medium-sized enterprises, may directly or indirectly support or hinder creativity and innovation in the workplace.

Innovative small and medium-sized enterprises tend to develop culture which emphasize and reward values and norms that support the younger generation and implementation of new ideas. Such systems encourage everyone in enterprise to develop original and useful proposals. They promote innovative ways of solving problems and finding solutions. Innovative enterprises value flexibility, mobilize freedom within the work setting and encourage co-operative teamwork. These are important in promoting the creativity and innovation. The aim of the paper is to present the organizational culture, especially the innovation-enhancing norms as an important elements that promote creativity and innovation in small and medium-sized enterprises.

2. Behavioural norms supporting creativity and innovation in small and medium-sized enterprises

Creativity means coming up with new thoughts, ideas and a unique ways of their combining or connecting. An enterprise that encourages creativity creates preconditions for new procedures and solutions. As opposed to creativity, an innovation is a process of transforming the creative idea into a useful product, service or work methods. When managers talk about the need of changes in an enterprise, they usually mean encouraging the creativity of the employees.

Sensible managers support creative ideas that can form a base and space for new, big opportunities. Kotler says: "Organization that does not innovate per-

ish.” It is obvious that an effort to innovate (in the broadest sense of the word) should be inherent in every enterprise (Lesáková 2009b: 17–18).

Innovation usually involves risk taking, non-standard solutions and unconventional teamwork practices (elements that are not easily managed by formal control systems). The effective management of culture is critical in mobilizing organizational creativity and innovation. Crucial in these efforts is the establishment and continuous encouragement of behavioural norms that promote the generation and implementation of new solutions. These norms refer to the socially created expectations that guide the acceptance of attitudes and behaviour in the work setting (Nevell et al. 2009: 40). Over the years, researchers have documented a variety of norms that consistently promote creativity and innovation in organizational settings. The main of these norms are discussed in more detail below.

It may sound obvious, but *promoting behaviour, which supports idea generating*, is a key for mobilizing creativity in the work. Managers building the creative environment need to promote open communication and forum of intra- and extra-organizational debate. Sustaining such an information flow is crucial. Lack of information hinders creativity in organizational settings; building organizational culture needs to encourage open discussion, constructive conflict, fair evaluation of ideas and fast approvals (Bessant and Tidd 2009: 408). All this of course needs to happen in a positive co-operative atmosphere, because conflict across enterprise could bring the opposite results.

Creativity is promoted in such an environment, where *continuous learning* is a firm-wide expectation. Employees should display an attitude of continuous curiosity; this will allow them to discover and explore new ideas, and potentially – identify new and valuable solutions. Keeping staff’s knowledge and skills up to date is a key in this respect.

The creative process often involves a risk taking. The generation of ideas requires experimentation and, as such, taking risks is usually unavoidable (and often necessary). Encouraging *risk-taking* behaviour needs therefore to be a part of the creative culture. To mobilize and encourage risk taking, managers need to avoid applying too many controls in the creative process, because it may likely to stop experimentation and to slow down creative flow. However, creative small and medium-sized enterprises have to face a commercial reality, because excessive risk taking may lead to costly results in terms of company’s revenue and equity.

Experimenting and risk taking may lead to mistakes. Mistakes are therefore an everyday practice in creative environment. Supporting a *culture that tolerates mistakes* and handles them effectively, is important in encouraging staff to think and act creatively. Creative enterprises need to have faith in their employees to try new things, even if this leads to failure or disappointing results. Enterprises that punish employees’ mistakes, discourage creativity and inhibit in-

novation. Creative small and medium-sized enterprises need therefore to acknowledge failure and constantly create opportunities to openly discuss mistakes and learn from the falls of the creative process. The successful management of mistakes often relies on manager's skills to clarify which mistakes are acceptable and which are not.

Positive examples confirm that behaviour that is *promoting change in the work setting* may influence positively organizational creativity and innovation. To support creativity, the culture must tolerate uncertainty, promote and reward positive attitudes towards change and encourage employees to change constantly the status quo and explore new ways of finding creative solutions (Walmsley 2009: 7).

Change and constant experimentation may likely lead to conflict in a workplace; conflict between colleagues, conflict between departments, conflict between individual's creative freedom and the constraints set by the client's commercial reality. Managers in creative enterprises often complain about *handling a conflict* between the creatives and the non-creatives. This is the reason why many creative enterprises try to employ managers with technical as well as business experience with the aim to overcome the gap between these two disciplines. The literature suggests that enterprises need to expect and tolerate conflict and handle it effectively in order to support creative behaviour in the work-setting. As the starting point of creativity often comes out from individual expression; it is important to acknowledge and to be sensitive to different styles of working. At the same time, managers need to train employees in the process of constructive confrontation in order to promote constructive feedback and an open, supportive culture in the workplace.

3. Norms supporting implementation of innovative ideas

Though creativity is important, commercial reality requires implementation; ideas need to be turned into innovations that will positively influence the corporate profit. In order to encourage action, several norms are important. The main norms are: emphasis on teamwork and effective group functioning; focus on speed and urgency, a need for flexibility and adaptability and a sense of autonomy (Walmsley 2009: 71).

The need for teamwork and effective group functioning is common in creative environment. Depending on the enterprise, teams may be assembled for each project, or staff may join different teams depending on the nature of a project. Staff may join different teams in order to promote a new perspective and encourage employees to utilize their work capabilities and interpersonal skills.

Employees need to be encouraged to work and communicate effectively. Implementation is successful when teams work harmoniously, communicate well and have common goals (Lesáková 2009b: 28).

Promoting behaviours that *support speed and urgency* is important for quick translating ideas into innovations. After the initial experimenting stage, which is a key in generating creative contributions, decisions need to be made quickly. Norms like speed, a sense of urgency and commitment to achieving deadlines (even if teams need to work long hours to achieve their goals) are also important. It seems that creativity and the willingness to discover and to deliver something new and novel, drive people to excel and redefine “acceptable” working hours.

Promoting *flexibility and adaptability* in the workplace is a key factor in supporting implementation. The constructive confrontation in the creative process requires from staff to be open-minded and flexible in their thinking. Changing the status quo and the way in which things can be done in a different way, is important for generating new solutions (Lesáková 2009a: 219–220). Employees need to be perpetually challenged; this requires from employees strong characters that can constantly deal with change and cope with the inevitable conflict.

Sustaining *the sense of autonomy* in the workplace is also important in promoting implementation in the work setting. Individuals need to be autonomous and take action without being asked to do so. This does not only promote the generation of new ideas, but also the quick implementation of valuable concepts. Developing a culture for creativity and innovation requires from managers to perpetually support the generation and implementation of ideas in the workplace. This requires that managers avoid in the managerial work some mistakes (Monch 2006: 16).

Despite the fact that innovation requires autonomy and personal initiative, *overemphasizing individual accountability* can be detrimental to the creative process. Though to staff has to be given individual targets and has to be evaluated against their achieved outcomes, overemphasizing individual accountability can create a climate of fear and may discourage employees from taking the risks. It also goes against the requirement for open communication, constructive feedback and the necessity of an open learning culture. Moreover, though individual performance appraisals serve as essential human resource management tools, they need to be carefully implemented and not promote a risk-averse culture.

Though enterprises need to consider also financial constraints, *overemphasizing quantitative goals and financial budgets* rarely promotes a culture of perpetual discovery and innovation. Objectives and financial constraints will certainly set the frame, in which the creative process will be initiated, but employees also need to be encouraged to act outside the firm and, if necessary, negotiate with the client or their company for extra resources.

The way enterprises handle the inevitable mistakes can increase or constrain creative processes at work. *Punishing mistakes* is a common mistake in business environments; it creates a culture of fear and hinders organizational creativity. Managers need to acknowledge mistakes as part of the learning experience. Creative thinking involves (often long) trial-and-error processes and punishing mistakes can be detrimental to the generation of new ideas. Enterprises that are innovation driven, tend to promote a forgiveness culture (Berchicci 2009: 191). Such a managerial attitude mobilizes an action across the enterprise, where people focus on doing things rather than on hesitating because of fear of failure.

Promoting internal competition is often used as a means for mobilizing initiative within a work settings. However, innovation usually entails collaboration across intra- or extra-organizational boundaries. Consequently, promoting internal competition may hinder effective team working and stimulate organizational policy that may be detrimental to the creative process.

Though managers increasingly acknowledge the value of creativity and innovation as a means of developing and sustaining competitive advantage, paradoxically, many enterprises *strive to be the same* as their competitors. They use similar processes, generate similar products and avoid the implementation of risky novel ideas and practices. Innovation requires managers to be different, because the profit from successful innovations is far greater than that achieved through imitation.

4. Principles of creativity and innovation

Organizational culture is an important determinant of organizational creativity and innovation. Several authors (Beerel 2009, Frappaolo 2006) have proposed principles, saying that enterprises should observe in order to build and sustain a culture that promotes the generation and implementation of new ideas and novel outcomes.

The building of an innovative culture requires *creating an environment of faith and trust*, in which good ideas have a chance to become great products. Truly innovative companies maintain creativity and innovation as a key corporate priority. Rather than focusing on safe ready-made solutions, visionary managers see and continuously support the world of discovery and the fact that innovation helps to increase profitability (Lesáková 2010: 12).

Be truly experimental in all parts of the business process is a critical part of the creative process. Especially in the early stages of creative discovery, encouraging employees in creative endeavours and taking sensible risk, is impor-

tant. Creative employees need to be constantly challenged and highly experimental work can help in this respect.

Promoting close and meaningful *relationships between the technical innovators and the marketing people* is another essential principle for promoting a culture of creativity and change. Although such arrangements may create some conflicts, open communication and constructive criticism between marketing and technical people is critical. Some authors encourage enterprises to bring together these two functions formally and informally (Andriopoulos and Dawson 2010: 263). Such a relationship does not solve the traditional tensions between cost control and experimenting, but also helps to provide a balance between the ideas of creative discovery and the concept of feasibility.

The commercial reality requires from enterprises to anticipate and to meet market driven requirements. Innovative enterprises *achieve the customer intimacy* by observing potential users, videotaping their actions, interviewing key stakeholders and studying customer's lifestyles and product decisions. They also increasingly employ sociologists, antropologists, who are becoming part of the creative process; larger enterprises increasingly employ them as full-time staff, while smaller firms often subcontract their services.

Being creative in enterprises should not be a privilege of a few selected employees. Visionary leaders try to *engage the whole enterprise in generating and implementing new solutions*. Creating a sense of community, where everyone works to achieve a common goal and beliefs in the value of discovery and innovation, is critical. This is organized both formally and informally. Formally, through planned communication activities such as: regular meetings motivating staff and providing opportunities for feedback, through e-mails celebrating achievements, through Internet that brings the employees together. Informally by "leading by example," initiating social "get togethers," engaging staff in discussions and others (Newell et al. 2009: 79).

Acknowledging the individual, providing opportunities for personal expression and encouraging employees to work on challenging projects – all of this is important in mobilizing the culture of creativity and innovation. Innovative companies create enjoyable working environment and support employees in achieving their ambitions.

A key principle for fostering creative culture in enterprises is a *collaborative approach to management*, in which employees are constantly aware of the company's actions and are able to present their views and opinions on numerous formal and informal occasions. *Creating a "no fear" climate* and culture that supports experimenting is essential in mobilizing innovation-enhancing behaviour. The fear of failure can be detrimental to organizational creativity. Creating a system that supports individuals in their creative endeavours helps to foster a "no fear" climate in the workplace.

5. Conclusions

The concept of organizational culture is one of the widely researched management topics. Culture plays an important role in supporting the creative process, because it can promote or hinder innovation-enhancing behavioural norms. Norms like risk taking, a tolerance for mistakes, and continuous support for change, are some of the attitudes and behaviours that innovative enterprises try to promote in their culture.

Organizational culture is increasingly seen as an element which, if effectively managed, could provide enterprises with managerial effectiveness. It may be viewed as something an organization is and defines culture as a pattern of basic assumptions that a given group has invented, discovered or developed in learning, to cope with its problems of external adaptation and internal integration. Encouraging and sustaining an organizational culture, which promotes the generation and implementation of new ideas among organizational members, is considered central to development of creative and innovative work settings. It is represented by a system of values, the organization rewards, supports and expectations; the norms that surround and/or underpin the policies, practices and procedures of organization, the meaning about what are the norms and values of the organization. Culture is considered a form of social control that is characterized as a shared phenomenon, which exists in both visible artefacts and mission statements, as well as at less visible and deeper levels.

Strong cultures are not necessary conducive to generating and implementing new ideas in enterprises (Andriopoulos and Dawson 2010: 268). What is required is culture, which helps to foster innovation-enhancing norms and at the same time promotes the social cohesion, necessary for turning ideas into innovations.

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Personality and behavioural factors determining the innovative activity of employees^{*}

Abstract: The paper presents personality-related factors which influence innovative activities of employees. The research was run in innovative enterprises ZPAS GROUP in order to obtain a more comprehensive view of the area of personality-related factors. The article also presents the enterprise under examination and the program of supporting innovation implemented in the enterprise in 2005 together with figures concerning the number of proposals which have been put forward and implemented.

Key words: innovation, personality, HRM, ZPAS GROUP

1. Introduction

The development of contemporary business organisations is largely dependent on their pro-innovative attitude. Most scholars are in favour of the concept that innovations rank among key factors affecting increasing competition of enterprises (Breen and Hamel 2007).

For this reason, innovation-promoting enterprises should closely link their activities and business with innovative management. Changes in managers' attitudes and operational methods require a continuous mechanism for supporting innovation introduced and operating in an enterprise (Krot and Lewicka 2009). A pro-innovative attitude may be understood as an individual or organisational feature. In the case of the former, the attitude is connected with openness to

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new solutions, readiness to take risk, going against outdated schemes as well as learning on a permanent basis. While, in the latter case, the pro-innovative organisation is characterised by openness to innovations, willingness to implement them consequently, creating an innovative and creative atmosphere accompanied by systemic and structural solutions which facilitate pro-innovative behaviour. Managers should make a significant contribution to unblocking the pro-innovation potential of their staff, inspire them towards new solutions, which ensures free and creative thinking and acceptance for moving away from the standard paths in the company. In addition, the introduction of pro-innovative management in enterprises is connected with the need to create procedures for providing incentives to and rewarding innovators.

2. A growing importance of motivation in the process of building employee commitment

In the era of knowledge-based economy where human capital ranks high among crucial competitive factors, a growing importance of personnel motivation and commitment building can be observed. Staff commitment is interpreted as a voluntary effort made in order to perform a task. It is connected with the desire of giving the best possible performance without any additional incentives on the part of the management. It is obvious that employees deliver excellent performance because that it is their intention and, because of that, it is particularly important to release the potential of the staff. An appropriate and well-selected incentive-related impact and building the feeling of employee satisfaction play an important role in the commitment building process. Incentive-related impact includes a whole range of various activities, starting from managers' awareness of needs of their staff, care about personnel development, leaving the area for independent initiatives to building trust and good relations.

Many authors emphasise the necessity of building more permanent employee commitment that the commitment based on external incentives only (Lewicka 2010). In this process, it is crucial that supervisors could "infect" their staff with the vision of the company, inspire them to take action and create the feeling that they participate in creating the company's value in the market. In addition, the staff must feel that the work has brought them closer to fulfilment of their own needs and achievement of their own goals. If a person is satisfied and their career is rewarding, feels stimulated to action, such person is able to find their, even hidden, potential, bring it to the light and, this way, contributes to the achievement of goals important to the organisation. Research

conducted by the author so far indicates that innovators are truly committed employees.

3. Personality factors and the style of work

Features characteristic of the innovator personality include openness, independent thinking and persistence in pursuing goals. Tokarz (2005) points out that, additionally, in order to understand the personality of an innovator, it is crucial to analyse motivation mechanisms as well as dimensions (determinants) of his personality, which, according to him, include: a strong ego, flexibility of cognitive structures, non-conformism, and spontaneity, tolerance of cognitive incompatibilities, internal steerability, autonomous cognitive motivation, aesthetic attitude, originality and self-fulfillment. A division based on two basic styles of problem solving in innovative and adoptive work situations remains popular (Kirton 1976, Foxall and Hackett 1992, Rilley 1993, Dew 2009).¹ The adaptator's goal is to improve his actions and, for this reason, he draws from an existing pool of well-proven solutions and procedures on the basis of the existing means and measures, he is disciplined, systematic, sensible, monotony-resistant and meticulous. In social relations he demonstrates conformism, he is dependent, sensible, needs acceptance when going beyond rules, sensitive to others, creates the climate of security, ensures stability and order, upholds collaboration. An innovator acts with an objective of introducing changes and, for this reason; he is in search of new solutions going beyond a given situation. He does not take the existing external limitations or available resources into considerations and he reanalyses a problem in a unique way. He is not capable to taking routine actions in a longer perspective. He often does not accept customs and habits, is independent, breaks rules and does not need support, is perceived as insensitive to others, increases the dynamics of interactions in a group. In some cases, he threatens group work.

The difference between the above-described styles concerns mostly: perception of problems, methods of their solving, introduction of solutions, the degree of exploration and attitude towards changes. In this case, the assignment axes are: originality, which is higher in the innovator (reconstruction and change, a high risk of inaccuracy), low in the adaptator (accuracy, sense and appropriateness), productivity – high in the adaptator (being methodical and regular), inconspicuous in the innovator (lack of regularity, irregular productivity) and conformism to rules – low in the innovator and high in the adaptator. Although

¹ The classification is based on the Kirton Adaption-Innovation Inventory (KAI).

they are subject to the same motivating influences in an organisation, their reactions to the influences are slightly different. Adaptator's motivation towards creativity is connected with a combination of external and internal motivating factors which change in connection with the certainty of outcome (Dew 2009). Adaptator's creative motivator, which is relatively low in relation to innovator's motivation, is the lowest when the result is maximally uncertain or maximally certain. It is exactly the other way round with the innovator, as his motivation during both maximum outcome uncertainty and certainty is the highest.

In addition, the research confirmed a positive correlation of the problem-solving style with the tolerance for ambiguity (Keller and Holland 1978) and locus of control, optimism/pessimism (Luck 2004, Dew 2009) indicating that, in the business context, innovators (persons demonstrating an innovative style) are more motivated towards demonstrating creativity.

An important theory of intrinsic motivation is Bandura's (1991) theory of self-efficacy, which focuses on the fact that assessment of one's own abilities and competences is a motivating factor. Strong faith in one's abilities not only affects choices and actions of individuals but also affects their determination and buoyancy shown also as the ability to regain one's strength after failures. In addition, persons with low self-esteem are more motivated by reactive and conservative stimuli than pro-active strive for improvement (Gecas 1982). The above deliberations indicate that motivation towards innovative actions is largely motivated by personality features.

The results presented in the following sections relate to personality, self-assessment of preferences and work style of respondents. They also include questions about respondents' attitude towards risk, group work, creativity, entrepreneurship, etc. On the basis of the above-mentioned theoretical analysis one may presume that innovators tend to be self-assured and remain self-assured when they are not sure what their colleagues think about them, they are not easily discouraged, tend not to prefer teamwork, are not prone to feel guilty in case of failures, etc.

4. The purpose and method of the research

The question whether the capacity to innovate is more a function of the right environment or is it connected with particular predispositions of individuals is analysed by many researchers (Slappendel 1996, Leavy 2002). According to Drucker (1986) and Adair (1990) there is no such thing as "an entrepreneurial personality" and it is actually the organisation that should be flexible enough to create a fruitful balance between structural restrictions and personal freedom.

Therefore, on the one hand, it is necessary to build trust in an organisation and release commitment (Glanz 1998) while, on the other hand, it is required to analyse individual personality determinants of the innovation process. In addition, many researchers indicate that these approaches should not be in opposition.

The research was run in innovative enterprises of ZPAS GROUP in order to obtain a more comprehensive view of the area of personality-related factors. The article has been written to answer the following questions:

- What are the personality characteristics of persons creating innovations?
- What aspects of their style of work make it different from the style of work of other employees?
- What aspects make them different from non-innovators?

The following two types of activities are known as part of the pro-innovative activity: inventive innovative activity and activity aimed at promoting innovation, e.g. publications in trade magazines, participation in trade meetings and presenting materials at conferences.

The following personality factors and factors related to respondents' beliefs and preferences were analysed:

1. Innovative behaviour, e.g. inclination to risk-taking, attitude to rules.
2. Entrepreneurship – self-diagnostic on one's own entrepreneurial mindsets.
3. Sense of work – a conviction that one's work is not pointless.
4. Sense of role importance – a conviction that an respondent achieves success or fulfils a difficult task.
5. Monotony of work – work evaluated by a respondent.
6. Motivation to achieve – willingness to do something significant, attitude towards tough problems, fulfilment of own plans.
7. Locus of control – a belief about whether the outcomes of one's own actions are effective; responsibility for one's own success.
8. Leadership – an ability of influencing others, inclination to become a leader.
9. Teamwork – readiness to work in a team, evaluating one's competences in the context of leadership.
10. Domination/submission – when an respondent feels more comfortable: in a dominating or dominated role.
11. Self-esteem – questions concerning self-diagnostic on emotions when contacting an authority, etc.

A questionnaire survey will be run to answer these questions. The following statistical methods were applied in the research: Mann-Whitney's U test, ANOVA test for analysing variance between means of several groups (qualitative and quantitative attributes), Pearson's *chi*-square test (in the case of an analysis of relations between two qualitative attitudes as well as analysis of Pearson's linear correlation of two quantitative attributes).

5. Findings

A description of the company which the respondents work for: ZPAS GROUP is an indigenously Polish enterprise that is developing dynamically in the sector of new technologies and has been operating in the Polish market for 37 years. The products of ZPAS GROUP mainly involve supporting elements used in advanced telecommunications, IT and electric power systems. The enterprise is proud that its capital involves not only state-of-the-art machinery, but also highly qualified, young and creative staff pursuing innovation and making use of the experience of more than thirty years gained by specialists who have been working in the enterprise from the very beginning. ZPAS exports about 50% of its products to European countries. ZPAS's products are used by such companies as: Ericsson, Siemens, Polkomtel, and the European Organization for Nuclear Research (CERN) for the most advanced solutions they develop. The company has the Employee Activity Program which is described next.

6. Employee Activity Program

In mid – 2005, ZPAS initiated the Employee Activity Program (EAP). The program was inaugurated with a series of trainings for the whole staff, implementing the rules and regulations of EAP as well as placing suggestion boxes in several places within the company premises. The main objective of the Employee Activity Program is to identify problems which are encountered in the workplace as well as to solve them effectively. The program allows to identify problems causing the waste of time, waste of quality and to communicate the problems to competent persons. EAP guarantees that all the problems raised will be handled, each proposal examined by competent persons and if assessed positively, implemented. The program also ensures that the time for implementation will be set. As a result, the program facilitates productivity, generates financial savings and improves quality of work and products.

It is necessary for the Employee Activity Program that the company has the EAP Committee which coordinates works as part of the program, registers proposals, replies to applicants, and activates employees to take part in the program.

The EAP Committee comprises four persons who are representatives of the main areas of the company business activity, i.e. Technology, Production, Marketing, and Quality.

It deals with initial selection of proposals, appointing persons competent to solve problems described in the proposals as well as taking decisions on implementing a given solution.

The Committee is responsible for observing proper operation of the procedure, appointing persons expressing opinions (specialists) who bear responsibility for presenting suggestions of solutions, giving opinions on a given solution, implementing and calculating suggestions, supervising the circulation of contents included in a proposal, enforcing deadlines, assessing the usefulness of suggestions for ZPAS needs, deciding on further steps concerning suggestions, setting deadlines and appointing persons responsible for implementing and co-ordinating the implementation, as well as granting rewards to initiators of innovative solutions.

The suggestions related to the Employee Activity Program should be placed in boxes with “Employee Activity Program” sign on them which are located within the company premises. Each Wednesday, a member of the EAP Committee checks the boxes and registers each proposal by assigning it a number in the EAP Committee Register of Proposals. After analysing the proposal, the Committee takes a preliminary decision whether the problem described or solution suggested are worth further action and appoints a competent person or a company’s organizational unit (specialist) in order to present the suggestion of the problem solution or to assess a given suggestion. Then, the proposal is sent to the appointed person and the author of the proposal is notified. The person expressing opinion who has been sent the proposal presents a proposal of solving the problem or provides an opinion on the solution suggested by the employee.

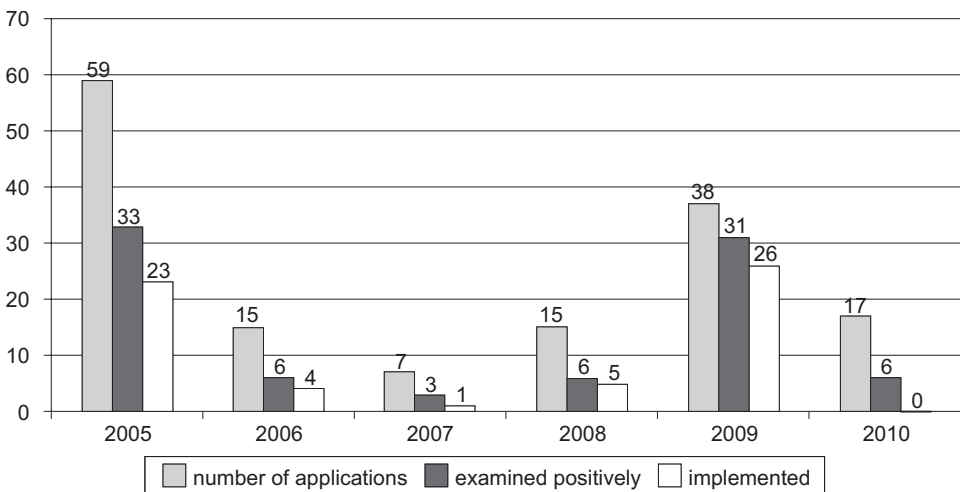


Figure 1. An overview of proposals put forward and implemented as part of EAP in subsequent years

Source: own study.

After receiving response from that person, the Committee analyses the suggested solution and decides whether to implement or reject it. If the decision is positive, the Committee appoints a person responsible for implementing the solution and for the deadline of implementation. Then it notifies the author about the decision. The person appointed by the Committee supervises timely implementation of the solution. After implementation, the person assesses the obtained effects and sends information on the implementation and effects.

Figure 1 presents an overview of the proposals put forward and implemented as part of EAP in subsequent years.

7. Description of the researched group

The research group consisted of 113 employees. Amongst them, 43% have a university degree, 42% have secondary education, others – vocational education. Most of the sample consisted of people aged 25–45 – 61%, over 46 years – 34%, and 4.6% of respondents is under 25. The group under research has been employed in the company for quite a long time, which is probably a result of little choice in the local job market. As much as 34% of the employees have been working in the company for 19 years or longer, between 9 and 18 years – 18% of the sample, 3 to 8 years – 35%, and others – less than 3 years. Because of the position held, the largest group of employees comprises specialists – 41%, managerial staff – 12%, others are production and administrative workers. Employees who take business trips constitute over a half of the sample – 55%, including 11% per 10 and more trips annually. Part of the researched group (14%) participate in works of the Lean Management team. The same number of the employees are members of the Employees Activity Program which aims at gathering and assessing proposals concerning suggestions of improvements in the company. Considerable part of the sample (40%) have, within the last 3 years, put forward proposals to the Employees Activity Program, and 5 may boast developing patent-protected innovations.

8. Adaptive and innovative styles

In a first step, the style of problem-solving presented by respondents was analysed. As to the analysis of style, the features concerning originality and effectiveness were taken into account. The more points a given respondent

obtained, the more innovative his/her style was; the fewer the points, the more adaptive the style was. Consequently, three types of respondents were distinguished:

1. Adaptative type (adaptator) – a person who, in times of change, focuses on developing existing structures and aims at improving them. Such a person is disciplined, accepts presented problems, is precise and trustworthy. The behaviour of adaptators is predictable and more stable. As leaders, adaptators are good time-managers and planners.
2. Innovative type (innovator) – a person who strives for changes. An innovator is undisciplined, difficult to manage, has a creative imagination, creates own visions, often questions objectives and the way of introducing changes. They usually support radical changes. It may be disadvantageous that they incline towards implementing changes only to find out what happens, causing unnecessary risk. They tend to be disorganised and take up too many tasks at one time and, as a result, not finish any of them. Therefore, they are not effective.
3. Mixed type – a person whose style is not exactly defined; there is a balance between both features and, therefore, the results fall in the middle of the scale. They are a bridge between two extreme categories: innovators and adaptators. They naturally discern different points of view, act as intermediaries in communication between the two extreme groups, and play the role of mediators when conflicts arise.

Figure 2 presents a scattering of points obtained by the respondents. The figure illustrates that the highest proportion of respondents are people whose style can be described as mixed. “Pure” adaptators (received fewest points) and innovators (the highest score) are placed in two ends of the figure.

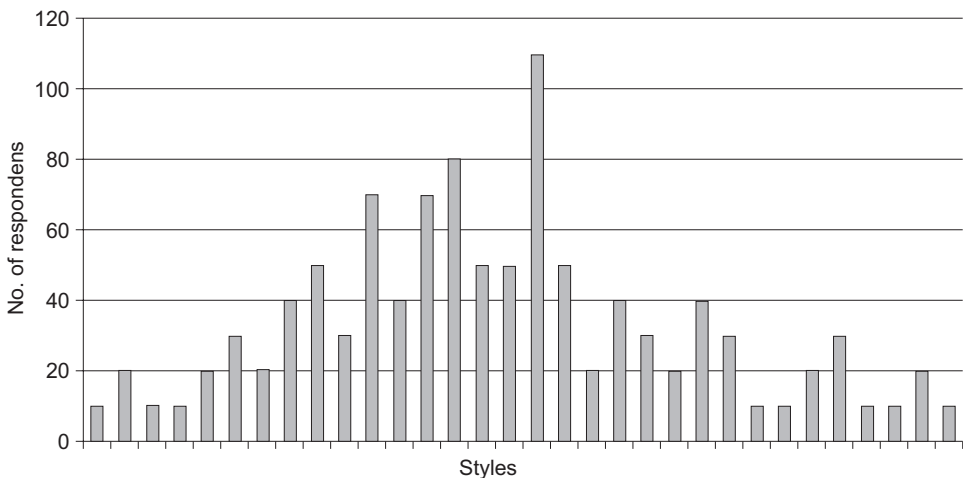


Figure 2. Scattering of points obtained by respondents

It was verified whether personality traits had an influence on the presented style and it turned out that dependencies occurred in nine cases: self-esteem $p < \alpha$ ($p = 0.000466$), leadership $p < \alpha$ ($p = 0.026029$), sense of work $p < \alpha$ ($p = 0.003750$), innovation $p < \alpha$ ($p = 0.0005611$), entrepreneurship $p < \alpha$ ($p = 0.004113$), teamwork $p < \alpha$ ($p = 0.031942$), locus of control $p < \alpha$ ($p = 0.000000$), motivation to achieve $p < \alpha$ ($p = 0.001211$), and energy $p < \alpha$ ($p = 0.041953$). Some dependencies are presented in the scatter plot (Figs. 3–8).

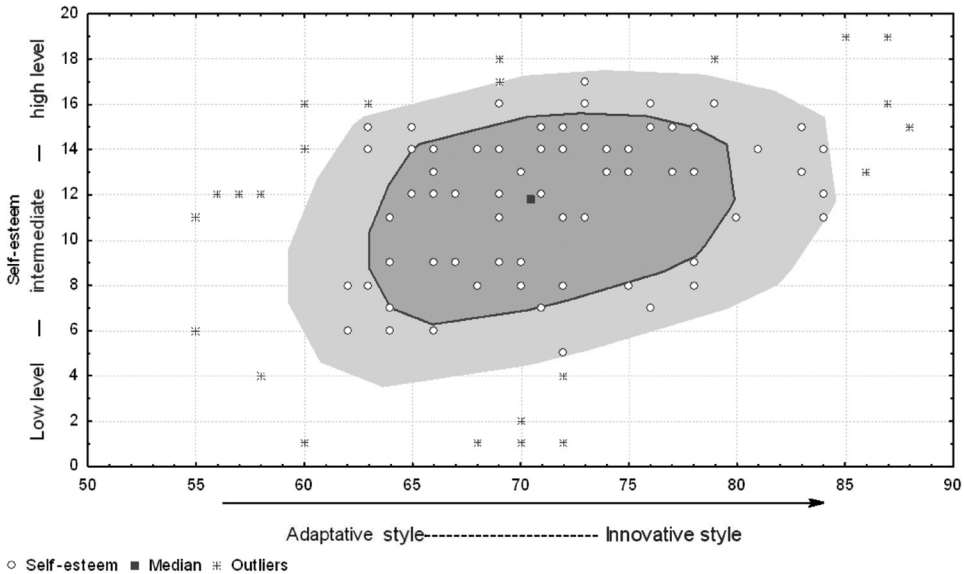


Figure 3. A bagplot presenting the style and self-esteem (scatter plot)

Spearman's rank correlation coefficient² was $R = 0.34$, which means that there is an explicit dependence but it is low, positive and directly proportional; the higher self-esteem, the more innovative the style becomes.

² Spearman's rank correlation – a rank correlation which gives values between -1 and 1 inclusive. Their interpretation is similar to the classic Pearson's correlation coefficient with one reservation though: unlike Pearson's coefficient which measures a linear dependence between variables and treats any other dependencies as disturbed linear dependencies, the rank correlation shows any monotonic dependence (including the non-linear one). The higher the correlation coefficient is, the greater the dependence between the variables is. If the value is close to 0 , then there is no dependency between the variables. In some cases, interpretation of the correlation coefficient is possible, and if the correlation coefficient:

- is smaller than 0.2 – there is practically no dependency between variables;
- is 0.2 – 0.4 – the dependency is explicit but low;
- is 0.4 – 0.7 – the dependency is moderate;
- is 0.7 – 0.9 – the dependency is significant;
- is above 0.9 – the dependency is very strong.

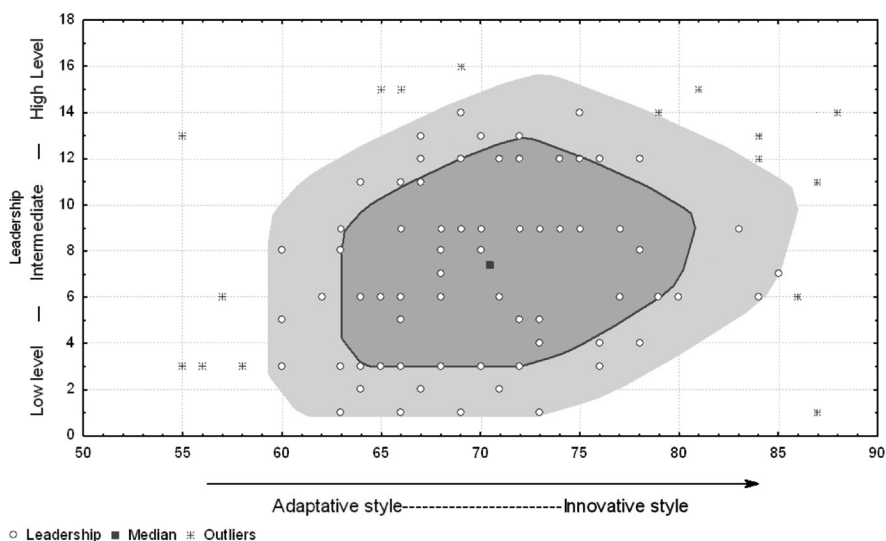


Figure 4. A bagplot presenting the style and the features of a leader

Spearman's rank correlation coefficient was $R = 0.23$ which means that there is an explicit dependency but it is low, positive and directly proportional; the more features of leadership, the more innovative the style becomes.

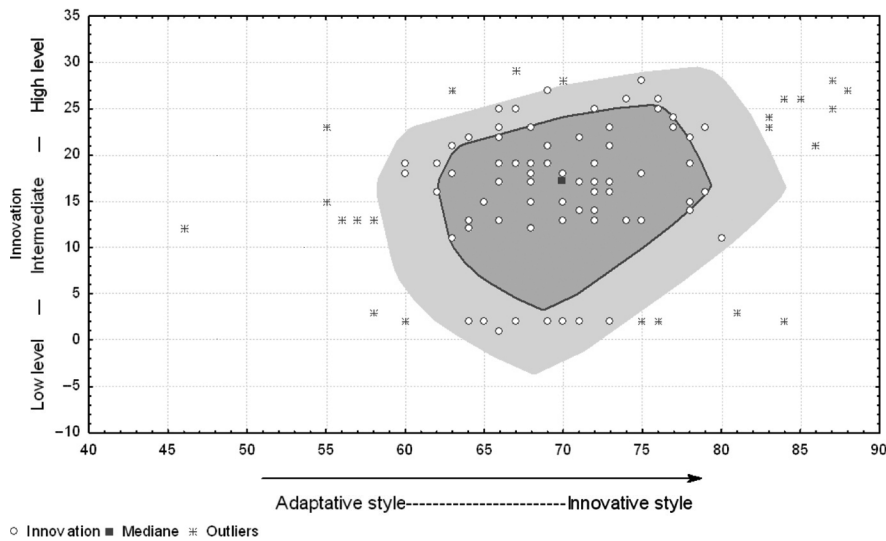


Figure 5. A bagplot presenting the style and innovation

Spearman's rank correlation coefficient was $R = 0.28$ which means that there is an explicit dependence but it is low, positive and directly proportional; the more innovative features, the more innovative the style becomes.

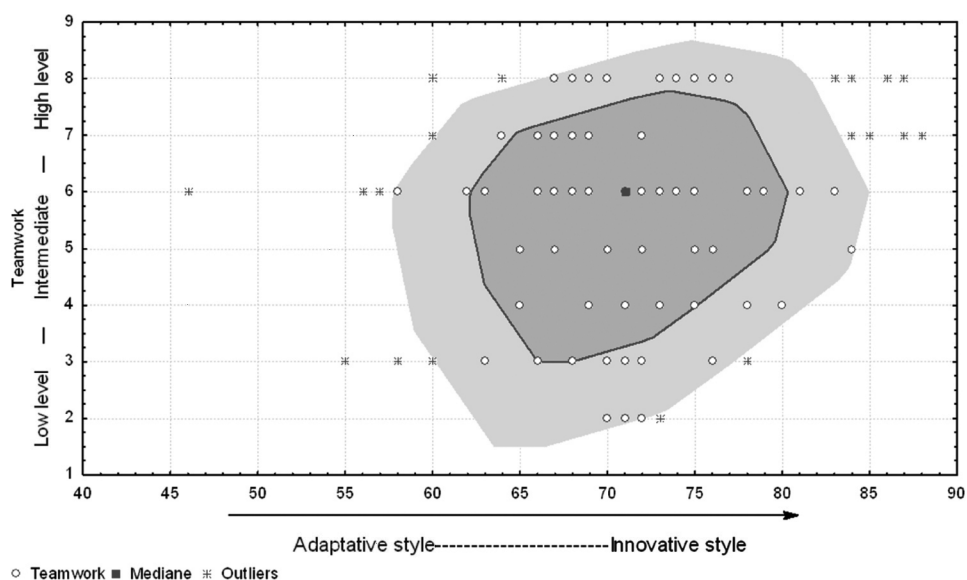


Figure 6. A bagplot presenting the style and teamwork

Spearman's rank correlation coefficient was $R = 0.21$ which means that there is an explicit dependence but it is low, positive and directly proportional; the more features proving one's abilities to work in a team, the more innovative the style becomes.

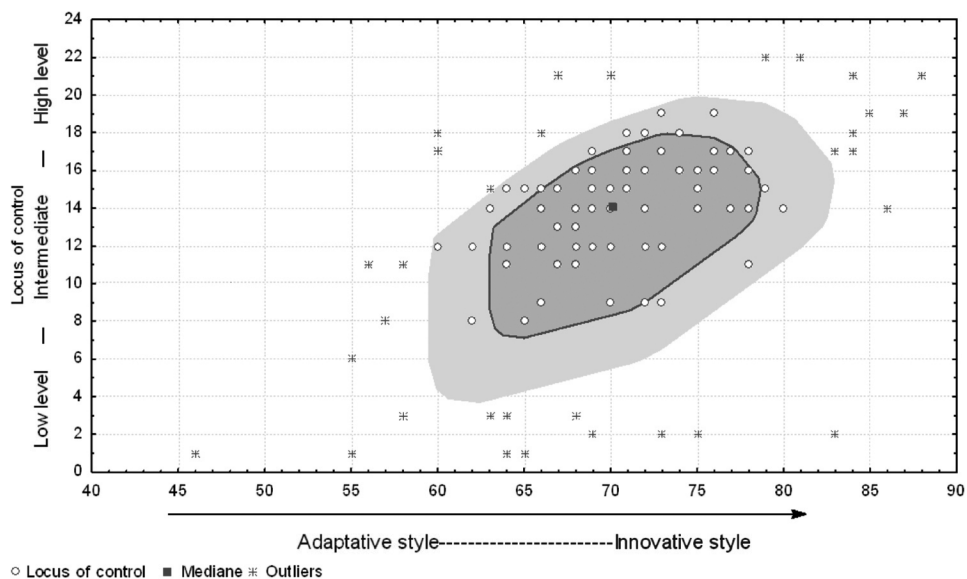


Figure 7. A bagplot presenting the style and locus of control orientation

Spearman's rank correlation coefficient was $R = 0.50$ which means that there is a moderate dependence but it is positive and directly proportional; the more "internal the locus of control," the more innovative the style becomes.

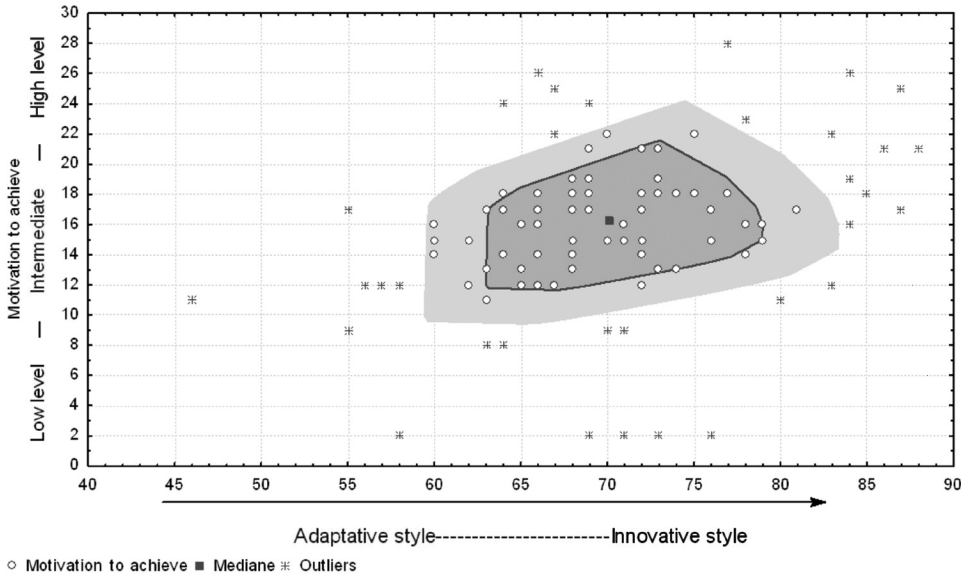


Figure 8. A bagplot presenting the style and motivation to achieve

Spearman's rank correlation coefficient was $R = 0.32$ which means that there is an explicit dependency but it is low, positive and directly proportional; the higher motivation to achieve, the more innovative the style becomes.

Therefore, it can be stated that people presenting the innovative style have a high internal locus of control, high self-esteem, a relatively higher motivation to achieve goals than the so-called adaptors. They are also more innovative in their actions, have a bit better leadership abilities and teamwork skills. Still, the two last dependencies should be looked at with reserve. Firstly, because they are weak, and secondly, the leadership questions concerned self-diagnostic on one's own leadership abilities on the one hand, and a conviction that the respondents can influence and convince others as well as take initiative, on the other. Though, innovators cannot be said to be classic leaders, but such features as initiative-taking and being convincing are definitely important, e.g. if we take the history of Google and its creators into account. It is similar as far as teamwork is concerned. The respondents evaluated their skills and whether they like working in a group.

The obtained results were also compared with hard measures of innovative engagement. It was researched whether there was a relation between the style and innovative achievements of respondents and their engagement in promoting innovation.

The test shows that there is a dependency between the style and innovative achievements of respondents $p < \alpha$ ($p = 0.020409$) while there is no such a dependency between the style and promoting innovation $p > \alpha$ ($p = 0.549278$).

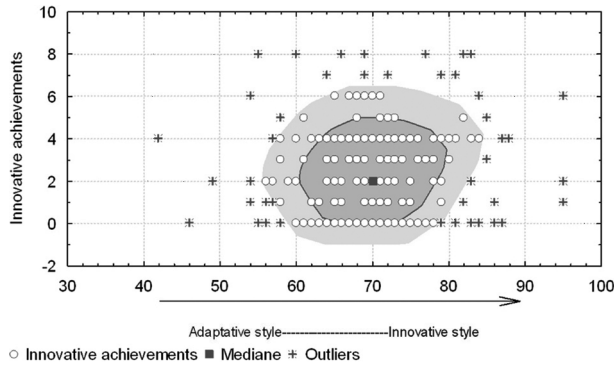


Figure 9. A bagplot of dependences between the style and innovative achievements

The correlation coefficient was 0.22 which means that there is an explicit dependence but it is low, positive and the higher the level of innovation in problem solving, the more innovative achievements the respondents can pride themselves on.

9. Personal traits depending on a certificate

Further, it was checked whether personality traits were somehow connected with information included in a certificate. The results were obtained by means of ANOVA Kruskal-Wallis test. The test shows that personality traits do not depend on the level of education, place of residence, the fact of having siblings and age relative to the siblings. Other dependencies are presented in Table 2, in the Annex.

The most obvious dependency was observed in the relation between innovative behaviours and innovative activity as part of the Employee Activity Program measured by the number of proposals submitted and realised ($p = 0.0433$). It was also confirmed, as expected, that entrepreneurship is connected with the activity of employees in the Lean Management team ($p = 0.0148$). Moreover, the test reveals that there exists a statistically important difference as to the locus of control relative to gender ($p = 0.0469$). Men tend to have more internal locus of control than women. The sense of role importance seems to be contingent upon a job position ($p = 0.0211$) and the possibil-

ity of going on business trips ($p = 0.0307$). It follows from the research that the sense of role importance is lowest among direct production employees in comparison to, for instance, managers and specialists. As far as business trips are concerned, people who travel a lot show a higher sense of role importance, which increases within the scope of 3–9 business trips per year and decreases slowly with the number of trips exceeding 10 a year.

Probably, such a great number of travels is more of a nuisance than a reward. Motivation to achieve seems to depend on tenure in trade ($p = 0.0346$) and tenure in company ($p = 0.0300$) as well as age ($p = 0.0431$). In the case of tenure, the motivation factor increases up to the level of 9–18 years, and then falls a bit. As to age, motivation to achieve raises among employees at 36–45 years of age, then remains the same in the 46 to 55 age band and then decreases a little. Energy is related to tenure in trade ($p = 0.0052$). It increases in the band of 3–8-year-long tenure, and consequently, decreases. The dependencies described above are depicted in Figs. 1 to 9 in the Annex.

10. Personality traits versus innovative achievements and promoting innovation

When it comes to innovative achievements, the test shows a statistically significant dependency with self-esteem $p < \alpha$ ($p = 0.042740$). The correlation coefficient was $R = 0.20$ which means that the dependency is low, positive and directly proportional, so the higher self-esteem is, the more innovative achievements.

As to promoting innovation, the test shows a statistically important dependency with self-esteem $p < \alpha$ ($p = 0.019428$), locus of control $p < \alpha$ ($p = 0.016955$) as well as thinking of one's work as monotonous $p < \alpha$ ($p = 0.032311$). The correlation coefficient of self-esteem was $R = 0.23$, which means that the dependence is explicit but low, positive and directly proportional, so the higher self-esteem is, the more intense promoting of innovation becomes. The correlation coefficient of locus of control was $R = 0.24$ which means that the dependence is explicit but low, positive and directly proportional, so the higher the locus of control, the more intense promoting of innovation becomes.

A reverse dependence was observed in the case of thinking of one's work as monotonous. The correlation coefficient was $R = -0.23$ which means that the dependence is explicit but low, negative and inversely proportional, so the more monotonous employees think their work is, the less willing they are to promote innovation. Table 4 in the Annex provides complete results of the dependencies.

11. Correlation between personality traits

A correlation matrix presents relations between personality traits. The numbers in bold mark relations above 0.25. The greatest dependency ($R = 0.44$) is observed between self-esteem and locus of control as well as between motivation to achieve and teamwork ($R = 0.43$).

Table 1. A correlation matrix between personality traits

Personality traits	Self-esteem	Leadership	Sense of work	Innovation	Entrepreneurship	Teamwork	Domination/ submission	Locus of control	Sense of role importance	Motivation to achieve	Monotony	Energy
Self-esteem	1.00	0.11	0.32	0.34	0.16	0.12	0.11	0.44	0.33	0.12	-0.14	0.05
Leadership	0.11	1.00	0.11	0.15	0.31	0.12	0.26	0.29	0.25	0.29	0.10	0.37
Sense of work	0.32	0.11	1.00	0.24	0.24	0.17	0.14	0.28	0.00	0.17	-0.14	0.12
Innovation	0.34	0.15	0.24	1.00	0.42	0.30	0.16	0.30	0.17	0.21	-0.12	0.30
Entrepreneurship	0.16	0.31	0.24	0.42	1.00	0.23	0.24	0.32	0.40	0.29	0.13	0.40
Teamwork	0.12	0.12	0.17	0.30	0.23	1.00	0.11	0.28	0.00	0.43	0.03	0.38
Domination/ submission	0.11	0.26	0.14	0.16	0.24	0.11	1.00	0.22	0.27	0.15	0.23	0.11
Locus of control	0.44	0.29	0.28	0.30	0.32	0.28	0.22	1.00	0.28	0.29	-0.18	0.19
Sense of role importance	0.33	0.25	0.00	0.17	0.40	0.00	0.27	0.28	1.00	0.04	-0.11	0.22
Motivation to achieve	0.12	0.29	0.17	0.21	0.29	0.43	0.15	0.29	0.04	1.00	0.04	0.31
Monotony	-0.14	0.10	-0.14	-0.12	0.13	0.03	0.23	-0.18	-0.11	0.04	1.00	0.18
Energy	0.05	0.37	0.12	0.30	0.40	0.38	0.11	0.19	0.22	0.31	0.18	1.00

The matrix points to the groups of traits which can be combined. For instance, innovation is connected with entrepreneurship, self-esteem, locus of control, and energy, but also willingness to work in a team. While entrepreneurship is related to innovation, sense of role importance, locus of control, motivation to achieve, and leadership abilities.

Self-esteem depends on the sense of work, innovation, locus of control, sense of role importance, while leadership abilities – on domination, locus of control, sense of role importance, motivation to achieve, and energy.

12. An ZPAS innovator's profile

The research shows that innovators constitute 59% of the respondents. The group consists mainly of specialists ($p = 0.04633$). It is not surprising that there is a significant difference in answers referring to the number of proposals submitted to the Employee Activity Project within last three years ($p = 0.00000$), proposals implemented ($p = 0.00000$), patent proposals filed ($p = 0.02354$), and the ideas/solutions which are already patent-protected ($p = 0.01061$). Innovators publish their articles more often and their publications are typically in-house articles, helpful at work and addressed to other employees ($p = 0.03750$). They more often participate ($p = 0.00929$) and present ($p = 0.00792$) their achievements during brand meetings, e.g. conferences.

Innovators have better understanding of the value of innovation communicated in the company ($p = 0.044805$) and better knowledge of reporting and communicating new ideas ($p = 0.04982$). The latter feature might simply come as a result of their experience. Moreover, they definitely more frequently admit that new solutions are accepted in the company ($p = 0.03326$) and that the company accepts industrial espionage to observe their innovations ($p = 0.04614$).

13. Conclusions

1. It appears from the various tests made that the more innovative style the respondents have (unlike the adaptative style), the more innovative achievements they can be proud of.
2. People with the innovative style are usually self-confident, with the internal locus of control, display innovative behaviour which involves, among others, a tendency to take risk more frequently than other people, leadership abilities and readiness to work in a team.
3. As far as innovative achievements are concerned, the test shows a statistically important dependency, according to which the higher self-esteem, the more innovative achievements are.
4. Regarding promoting innovation, the test reveals a statistically significant dependence which emphasises the fact that people who promote innovation are more self-confident and have an internal locus of control as well as feel their work is not monotonous.
5. It should be noted from the analysis of relations between individual personality traits of respondents that the relation is strongest between self-esteem and locus of control as well as between motivation to achieve and teamwork.

It means that if a person has one of those traits, it is probable that he/she has also the other one.

When seeking traits which differ innovators and people who can pride themselves on innovative achievements, the key ones involve self-esteem and locus of control. One cannot resist drawing a sad conclusion that a person who enters corporate structures has already the personal traits shaped. Since they are connected with the culture of a given culture, its environment, parenthood styles, and social and economic differences. So what actions can be taken within corporate structures in order to develop the desired traits? Personality traits are fixed and hard to change especially in mature years. Yet, it seems that putting pressure on development and understanding oneself better due to specially designed trainings or activities of managers aimed at fostering creative thinking, self-esteem of subordinates as well as highlighting relations between their engagement in work and results are most efficient in developing the desired traits.

The results of the research will increase our understanding of the impact personality-related factors have on innovative attitudes. The attitude oriented towards increasing the competitive edge should continuously emphasise improvement in performance and creation of innovation as well as continuous care for acquiring and retaining the best people in the company.

14. Annex

Table 1. Test results of the Spearman's rank correlation concerning the style and personality traits

Style correlation with	N	R	T(N-2)	p level
Self-esteem	100	0.34	3.62	0.000466
Leadership	95	0.23	2.26	0.026029
Sense of work	106	0.28	2.97	0.003750
Innovation	100	0.28	2.83	0.005611
Entrepreneurship	106	0.28	2.93	0.004113
Teamwork	100	0.21	2.18	0.031942
Domination/submission	92	-0.03	-0.32	0.749282
Locus of control	101	0.50	5.72	0.000000
Sense of role importance	93	0.19	1.84	0.068607
Motivation to achieve	101	0.32	3.33	0.001211
Entrepreneurship	106	0.00	-0.05	0.963241
Energy	106	0.20	2.06	0.041953

Table 2. Style versus innovative achievements and promoting innovation

Style versus	N	R	t(N-2)	p level
Innovative achievements	106	0.22	2.35	0.020409*
Promoting innovation	105	0.06	0.60	0.549278

Table 3. Kruskal-Wallis test results concerning personality traits and a certificate

Personality traits	Gender	Level of education	Tenure in trade	Tenure in company	Position	Business trips	Lean Management	EAP	Age	Place of residence	Siblings	Age rel. to siblings
	p (test probability)											
Self-esteem	0.3221	0.8860	0.9650	0.6887	0.8537	0.0775	0.6954	0.3224	0.4889	0.4371	0.8248	0.8399
Leadership	0.7413	0.0860	0.6354	0.5286	0.1447	0.7430	0.6643	0.1551	0.2282	0.4885	0.7221	0.2442
Sense of work	0.9703	0.3046	0.4035	0.4378	0.0876	0.4755	0.7229	0.8960	0.8878	0.4316	0.7603	0.6339
Innovation	0.0860	0.3321	0.3890	0.7731	0.4074	0.2713	0.3241	0.0433*	0.7226	0.8054	0.8643	0.1369
Entrepreneurship	0.8165	0.4742	0.2734	0.9150	0.3672	0.1517	0.0148*	0.6030	0.1269	0.9881	0.3221	0.6283
Teamwork	0.8449	0.8138	0.6979	0.2382	0.6811	0.2611	0.8598	0.4886	0.2714	0.3997	0.6162	0.5196
Domination/submission	0.1246	0.3645	0.6225	0.2258	0.8569	0.3208	0.6398	0.0568	0.2221	0.0757	0.5609	0.3994
Locus of control	0.0469*	0.6606	0.9380	0.4905	0.2647	0.2080	0.8891	0.1956	0.4593	0.7939	0.3267	0.3049
Sense of role importance	0.2940	0.2164	0.9069	0.9059	0.0211*	0.0307*	0.5251	0.2018	0.0848	0.9345	0.0558	0.6081
Motivation to achieve	0.6186	0.3026	0.0346*	0.0300*	0.5889	0.7677	0.2050	0.6155	0.0431*	0.4553	0.4479	0.8238
Monotony	0.7827	0.3786	0.4344	0.1820	0.1188	0.0509	0.4721	0.4132	0.0890	0.7637	0.3932	0.8020
Energy	0.4905	0.4304	0.0052***	0.1883	0.3420	0.8003	0.1295	0.7411	0.0690	0.6694	0.3446	0.0948

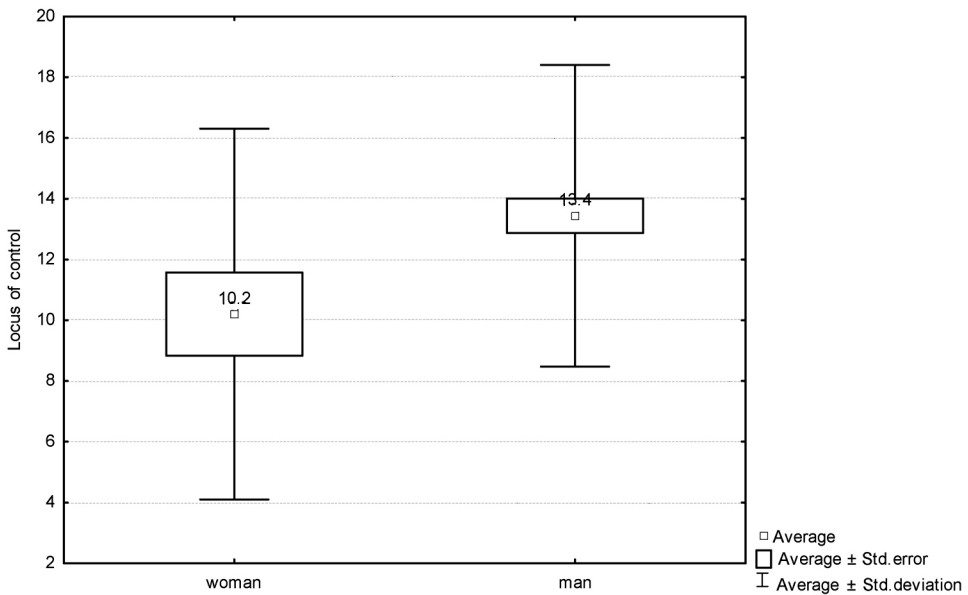


Figure 1. Locus of control versus gender

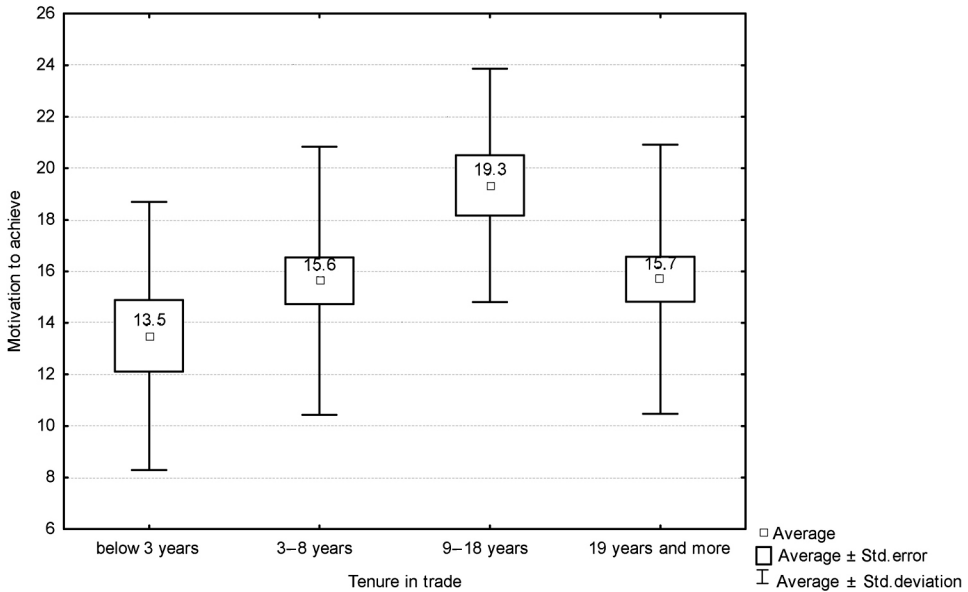


Figure 2. Motivation to achieve versus tenure in trade

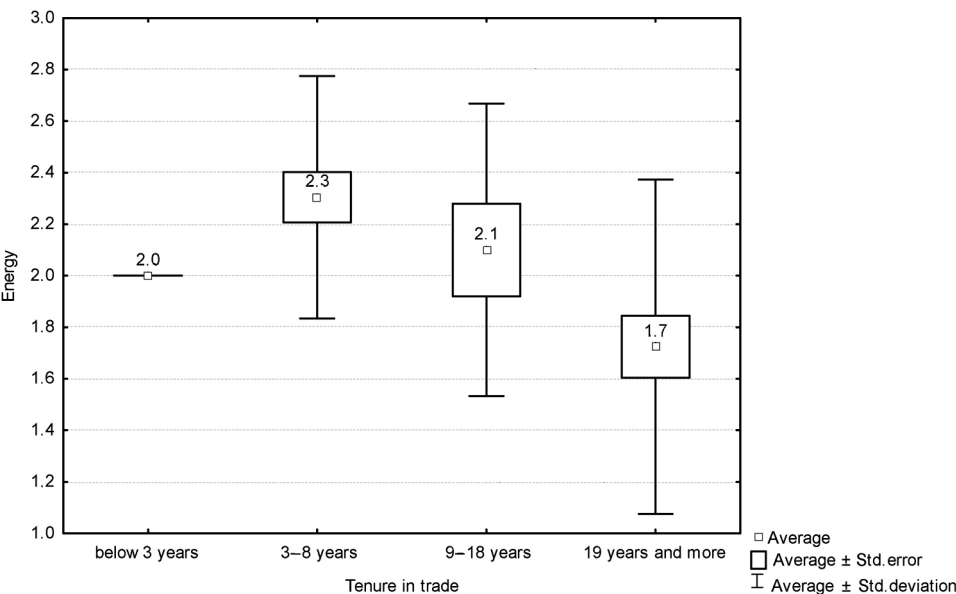


Figure 3. Energy versus tenure in trade

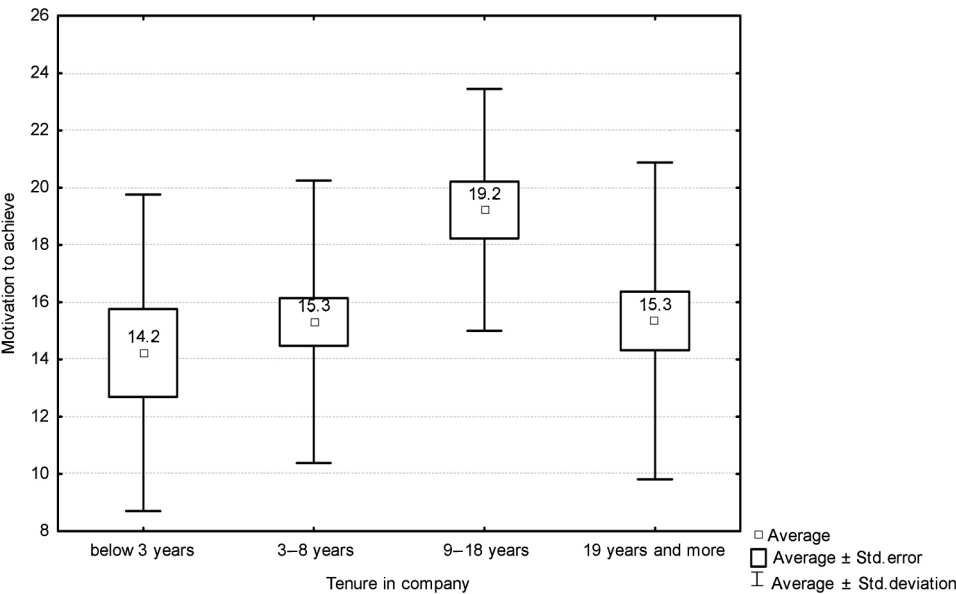


Figure 4. Motivation to achieve versus tenure in company

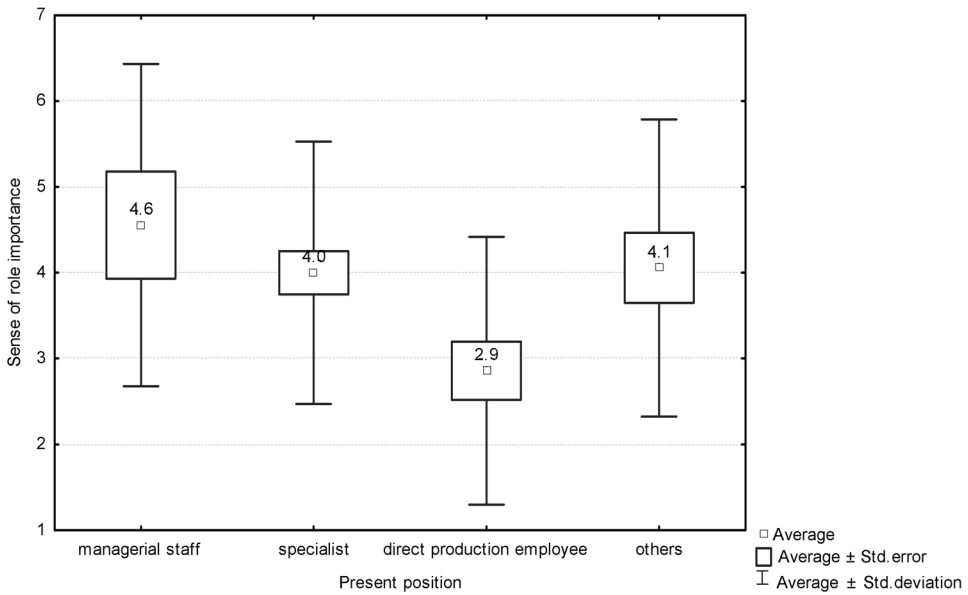


Figure 5. Sense of role importance versus present position

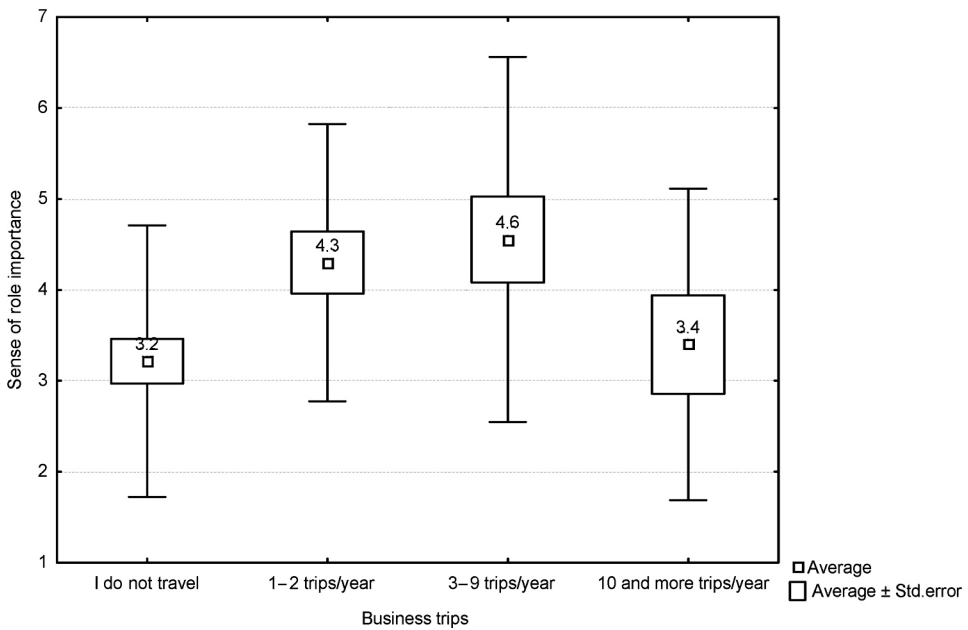


Figure 6. Sense of role importance versus business trips

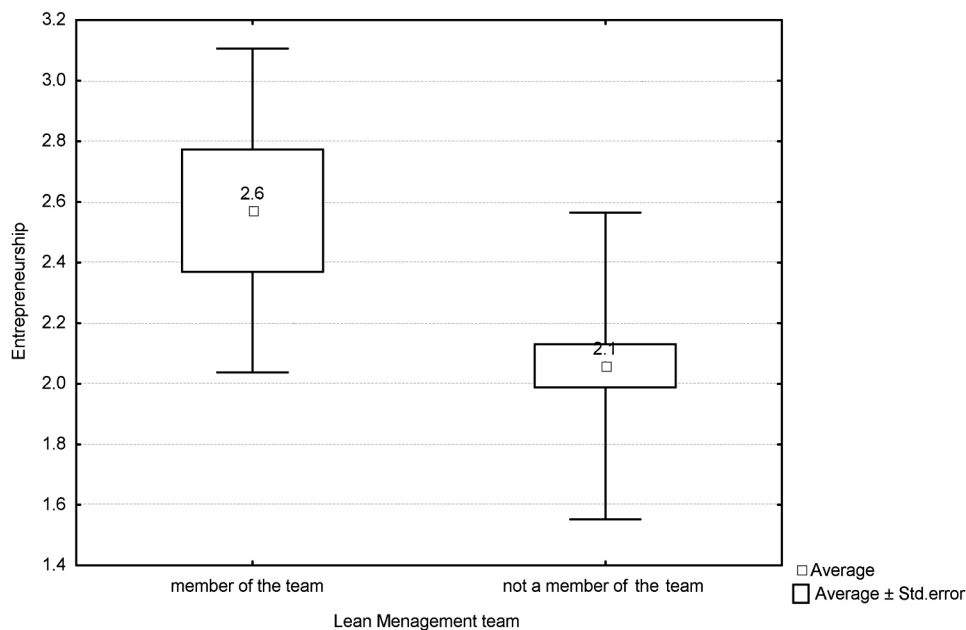


Figure 7. Entrepreneurship versus membership in the Lean Management team

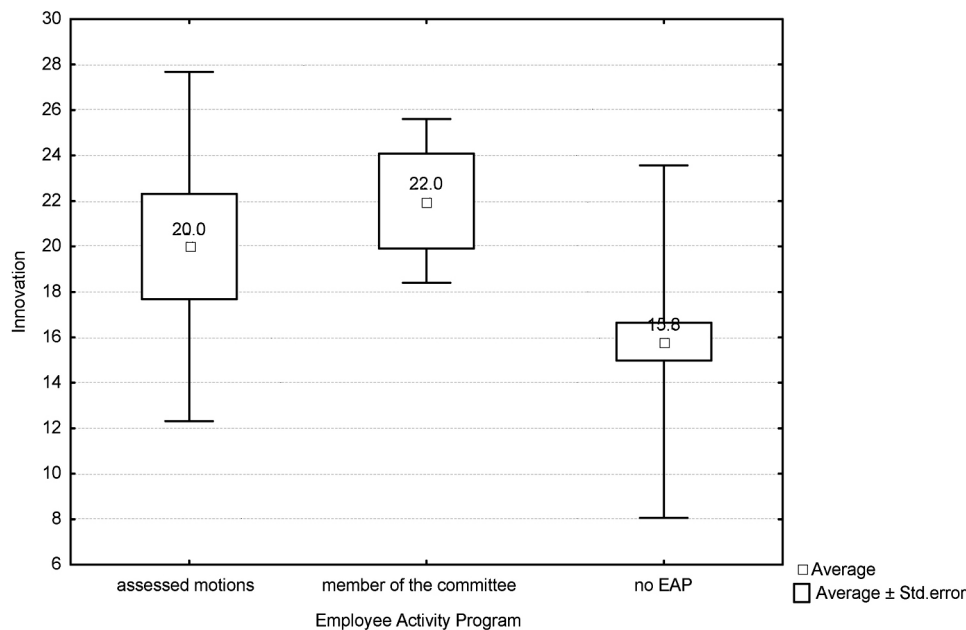


Figure 8. Innovation versus activity in EAP

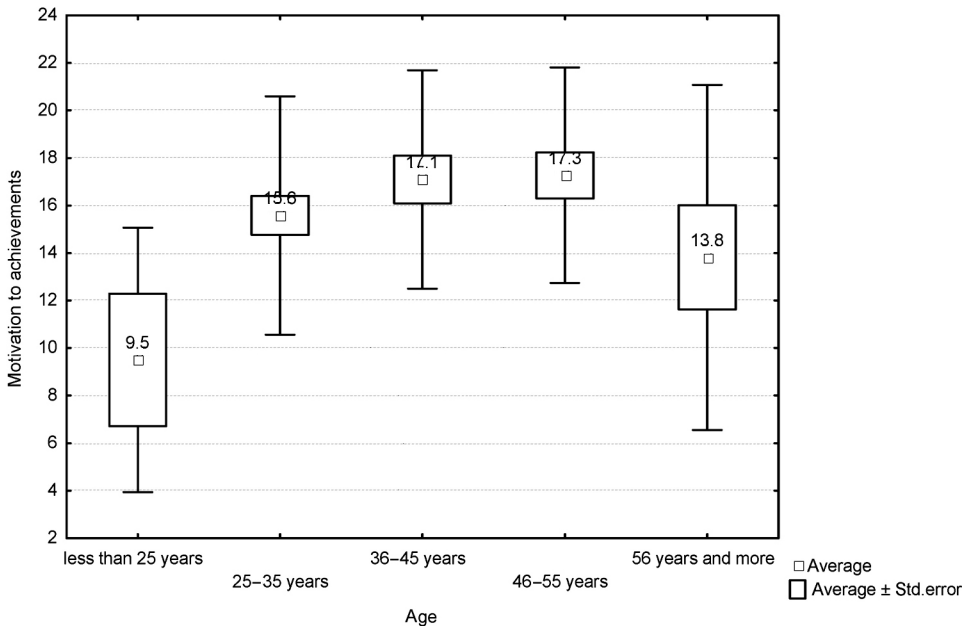


Figure 9. Motivation to achieve versus age

Table 4. Results of the Spearman's rank correlation concerning innovative achievements and promoting innovation versus personality traits

Personality traits	Innovative achievements			Promoting innovation		
	R	t(N-2)	p level	R	t(N-2)	p level
Self-esteem	0.20	2.05	0.042740	0.23	2.38	0.019428
Leadership	0.04	0.35	0.727428	0.11	1.08	0.283467
Sense of work	0.18	1.71	0.089714	0.19	1.87	0.065231
Innovation	0.05	0.53	0.597260	0.08	0.84	0.401408
Entrepreneurship	0.18	1.54	0.127446	0.23	1.98	0.051516
Teamwork	-0.11	-1.07	0.285169	-0.02	-0.23	0.814883
Domination/submission	0.05	0.49	0.625212	0.05	0.48	0.635660
Locus of control	0.09	0.89	0.377665	0.24	2.43	0.016955
Sense of role importance	0.00	0.01	0.992439	0.15	1.40	0.164605
Motivation to achieve	-0.03	-0.29	0.769607	-0.04	-0.44	0.658954
Monotony	-0.02	-0.20	0.842539	-0.23	-2.18	0.032311
Energy	-0.17	-1.44	0.153641	0.16	1.34	0.183882

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Transformative leadership: Narratives from Finnish and Polish universities

Abstract: The aim of this study is to research the issue of leadership at two universities during the administrative changes of the last decades. This study is based on the numerous changes which took place in the last decades, the Bologna process and the effects of globalisation which the universities had to face. These immense changes have forced the universities to alter their traditionally stable operational principles and leadership methods and styles. That is why we want to address the issue of how leadership exists and creates different opportunities and frontiers: dares and advancements in work of the university staff.

Key words: universities, leadership, narrative research, Finland, Poland

1. Introduction

This study is based on the narratives, qualitative research; stories written and told by managers and lecturers. The narratives are initiated by thematic questions and analysed by a researcher from a different university to guarantee objective handling. Leadership, knowledge, skills, and gender of the managers and lecturers are essential elements for this study (Standley and Wise 1993, Westman 2000). We try to understand new ways of knowing and seeking truths from leadership for the empowerment of women and men, managers and lecturers. For that purpose, we have collected, analysed and interpreted the narratives. The focus is on the educational and strategic leadership at the universities. The research questions are as follows:

- How has the leadership changed in recent years at your university?
- Could you tell us about your everyday experiences of leadership (good/not so good leadership)?
- What kind of leadership styles and tools have you found effective in training, motivating and encouraging employees or students?
- Think about your experience as a woman or man leader/lecturer. How does gender affect leadership or teaching at your university and at your work?

2. Literature review

The theoretical viewpoint is based mainly on the theories of management, leadership and education seen from the perspective of a critical theory and feminist studies (Carr and Kemmis 1986, Brookfield 2005, Freire 1998a, 1998b, 2005, Mezirow 1995, Hirdman 1990, Anttonen 1997, Walby 2001). On the everyday level, the critical theory focuses on social situations of people trying to find truth and knowledge for development (Habermas 1987: 72–73). The critical theory emphasizes the approach of critical thinking. It involves consideration of the premises, possibilities and limitations of the knowledge. In this study, it involves critical evaluation of leadership. The reflection will be seen as the evaluation of lecturers' own action. The critical action can be oriented towards emancipation of managers and lecturers. A manager and a lecturer will be seen as a subject who creates and rewrites her/his own leadership style in the context of global economy and wider society (Carr and Kemmis 1986). The goal of the critical self-reflection is that managers and lecturers are able to recognize and evaluate their own action principles and preconceptions. Therefore, we should study more carefully how managers and lecturers understand and re-structure their leadership styles in their everyday professional life (Walby 2001, Pylkkä and Westman 2005).

One of the influential leadership models was proposed by Burns (1978), who characterised leader behaviour as either transactional or transformational. In transactional leadership, leaders and followers exchange needs and services to accomplish independent objectives. In this form of "leadership of bartering," positive reinforcement is given for good work (Sergiovanni 1991).

Transformational leadership has generally been defined in terms of the following four leadership characteristics: idealised influence or charisma, inspirational motivation, individual consideration, and intellectual stimulation (Bass and Avolio 1994). Yammarino and Dubinsky (1994) describe transformational leaders as raising awareness and interests in groups, increasing employee confidence, and gradually moving the followers' interest from the importance of

their personal existence to the existence of the group. Transformational leadership consists of components that are especially significant in modern organisations, such as, visions and individualised consideration – being a coach rather than a supervisor (Dess and Picken 2000).

In the last 10 years, more research has been conducted on transformational leadership than on all other leadership theories combined (Judge and Bono, 2000). As a result, the idea that the dimensions comprising transformational leadership affect critical organisational attitudes and outcomes is now well established in the leadership literature (Bass 1998). There is some evidence to show that a charismatic or transformational leadership style is effective in an educational setting (Muijs et al. 2006, Neumann and Neumann 1999).

Models of leadership used in higher education institutions are largely derived from business. Many executives express the opinion that managing a university does not differ from managing any other complex organisation (Marion Gpendlove, UK). Boldt (1991) suggests that although there are strong similarities between business and university strategic management, the differences make the university's strategic management much more difficult. Other researchers state that a direct transfer of business practices to the educational context is inappropriate (McIllhatton et al. 1993); variations within the educational sector itself have been found (Frenkel et al. 2006).

Leading universities are confronted with a unique challenge (Splendlve 2007). Because of the organisational complexity of a university, its multiple goals and its traditional values, the nature of leadership in higher education is ambiguous and contested (Petrov 2006). Universities have been described as “organised anarchies” with high inertia, unclear technologies and problematic goals (Cohen and March 1974). Leading academics have been likened to “herding cats.” Yet, the very strength of the academic system lies in independent thought, creativity and autonomy of people who work there (Splendlve 2007). Unilateral top-down leadership is clearly at odds with traditional values of academic freedom, autonomy, democratic participation and the variety of academic interests (Middlehurst 1993).

In current corporate culture at universities, some reluctance to appoint outsiders to leadership roles can be observed. As a result, it is a common practice that, despite the growing complexity of institutional management, strategic positions at universities are occupied by people who have limited knowledge and experience on managerial positions and limited leadership skills (Splendlve 2007). In addition, in many cases, there is no clear job description for strategic positions at universities, and executives often adjust their activities to suit their own skills, attitudes and knowledge. (Hollenbeck et al. 2006.)

Due to the internal recruitment practice, most university executives continue their research and teaching activities. Middlehurst (1993) suggests that continuing academic activity is important to the executives, as it eases the tran-

sition back to a full-time academic post at the end of the lecturers' tenure or when they wish so. In practice, time is a great constraint on management activities due to the demands of the research and teaching work.

In spite of the crucial role of academic leaders, assumption of the role is frequently based on research rather than leadership competence. In the early 1990s, Gordon and Stockard (1991) observed that in the US schools of education, total absence of any prior managerial experience was a common characteristic of most chairpersons. They also noted a lack of management trainings for these leaders. Similarly, Thompson and Harrison (2000) paid attention to the lack of formal management development for heads of schools in a UK university context. Equally, Ramsden (1998) reported his own feelings of inadequacy resulting from the lack of leadership exposure when appointed to an academic leadership position in Australia. This author's 17-year-long experience of working at universities in Hong Kong, 7 of which as a head of the department, presents a picture totally consistent with the above observations.

Yielder and Codling (2004) claim that in the traditional university sector, promotion to senior management positions has tended to be based on academic prowess, largely relating to research capability. As Bargh et al. (2000) point out, senior academic leaders may not be well suited to undertake management duties. On the other hand, Goodall (2006), in her documentary study, finds that the most highly ranked universities have leaders who are more highly cited. She admits that it is not clear whether the universities are performing well because of these successful academics or whether this is because good universities are able to attract successful academics.

Gordon and Stockard's (1991: 176) survey of schools of education across the USA found that the faculty had a greater preference for the "representor-advocator, communicator, advisor-counsellor and motivator" aspects of chairpersons' responsibilities than for the "implementer, supervisor, evaluator and recruiter" aspects. The authors concluded that "the faculty/department members would like to place more emphasis on leadership responsibilities that encompass greater use of relationship skills." A comparison of the preferred aspects of chairpersons' responsibilities with the less preferred ones is reminiscent of the transformational-transactional leadership distinction (Pounder and Mun 2001).

Arguably, the paradoxical nature of the university organisational effectiveness needs leaders capable of managing competing priorities. Ramsden (1998) suggests that leadership at universities is "about tensions and balances." Drawing on Kotter's (1990) leadership-management distinction, Ramsden argues that university leadership requires leaders capable of producing change, aligning people and motivating them (Ramsden 1998). Pounder's (1999) findings combined with the observations of Ramsden (1998) indicate that the central requirement for university leadership is flexibility.

The difficulty for academic leaders is not confined to a lack of leadership and management development. A further problem is a lack of agreement within universities on what the academic leadership role entails (Pounder and Mun 2001). For example, in their research on managerial competencies conducted at the University of Ulster, Thompson and Harrison (2000) found that deans emphasised the team management aspects of the heads of school role, whereas the heads themselves rated managing people as individuals rather than team members as a central aspect of academic leadership. Not surprisingly, given the individualistic nature of the academics, the heads' view clashed with the opinion of the staff (subordinates) whose preference was for heads that were facilitative and non-managerial. In the context of this paper, it was interesting to find out that the Ulster study showed an agreement of heads and staff on the importance of competencies labelled "Obtain the commitment of others" and "Create a shared vision, and develop a mission to give purpose to the school." Both competencies are reflected in the transformational leadership construct. The above discussion focusing on academic leadership as a notion unique to educational organisations indicates a lamentable lack of leadership preparation for those assuming leadership roles. It also highlights different expectations of the role that are often held by staff at various levels of a university organisational hierarchy (Pounder and Mun 2001).

The differentiation of men and women's work is subsequently reflected at the universities. On average, women are placed at a lower level of the hierarchy than men and, moreover, they earn less than men. Managerial positions of women are typically lower than men's in higher education organisations. The question is what gender and sexuality mean in the context of leadership and in the context of everyday work of the university staff?

3. Methods and methodological solutions

The empirical findings are derived from told and written stories of managers and lecturers (N = 11; men = 4; women = 7). In this study, we understand managers as people on different levels of organisational management and lecturers as principal lecturers, working on an hourly basis.

According to the ideology of the qualitative narrative research, we tried to find different kinds of informants: old, young, women, men, managers, lecturers, and principal lectures. We also wanted to find people whose cultural and ethic background was different.

Besides, we tried to understand differences and similarities in styles of leadership. We wanted to see how the present leadership influenced the work-

ing environment and the staff. In addition, we aimed to see how the transformative leadership empowered people to do their work better and to create empowerment in working environment.

In this kind of the study, epistemological and ontological questions combine. It means that knowing and being cannot be separated from each other (Ramazanoglu 1992, Liljeström 2004). We adopted an understanding approach.

A narrative, according to *Concise Oxford English Dictionary*, is “a spoken or written account of connected events; a story” (Soanes and Stevenson 2004, quoted in Meyers 2009: 211). The narrative is an important way of making human experience meaningful (Polkinghorne 1988). Narratives have been widely used for producing biographical research data in social sciences as well as in educational sciences, but they are also well suited for collecting and presenting data about organisations and organisational actors (Czarniawska-Joerges 1995, Czarniawska 1997, Meyers 2009). An interesting feature of organisational narratives is that explanation and interpretation often appear side by side (Czarniawska-Joerges 1995). What is more, a critical narrative study has the potential to change the status quo. Publishing previously silenced narratives of women and (those who are situated in the minority groups) (Riessman 1993) women managers can cause change and lead to emancipation (see Meyers 2009: 214).

This qualitative study will be carried out from an interpretative, phenomenological perspective, which aims at understanding the participants’ point of view. The written and told narratives of managers and lecturers function as a vehicle for “sensemaking” (Weick 1995) and distributing individual experience to others. Sensemaking, according to Weick (1995: 16–17), is an internal process directed towards identity construction, still it is contingent on others. Sensemaking often happens in retrospect and combines self, action, interaction, interpretation, meaning and joint action (Weick 1995: 41). The sensemaking and self-reflection are essential in a study like this. When an informant is telling or writing a story from her/his experiences of leadership, sensemaking and self-reflection is a part of this process – knowing or without knowing. Informants create their understanding and meaning of the leaderships styles and the questions of gender in their narratives.

One of the strengths of the qualitative approach is to make the invisible visible. Everyone has their own inner stories. Informants tell stories as they wish. Based on these stories, researchers reconstruct new narratives which can be regarded as helpful tools for understanding leadership and management (e.g. Seely et al. 2005, Kohonen 2007). The stories are carrying the cultural ethos and spirit of the organisation. The informants act as sensegivers through their stories, the organisation acts as a sensemaker for their stories. Hidden meaning of the stories of leadership can be uncovered by deconstructing the narratives.

4. Empirical findings

4.1. Changes in leadership at universities

Most informants (N = 8) claim that leadership at universities has changed a lot in recent years. This is due to the global economic changes as well as under the influence of the legislation of the European Union. For ages, universities have been perceived as a breeding ground for everlasting values. In spite of this noble mission, universities are set in a specific reality and have to take up new challenges in order to step towards the future and meet the requirements of the market economy.

According to one Finnish female lecturer:

Earlier, the idea of universities was to develop educate and civilized people – nowadays we are producing people for the business of the global world. This ideological change has influenced the subjects of teaching and research. This ideological change has also influenced the style of leadership...

This opinion points to the changes which have taken place in the area of the university's mission. Traditionally understood autonomy of universities was to secure three freedoms: the freedom of teaching, research and academic discourse. These rights are included in the European law which results from the Bologna Charter stating that "a university is an autonomous institution at the heart of societies." At present, it can be noticed that universities evolve towards financial measurable results, and resign from traditional academic ideals to some extent.

Another Finnish female lecturer points out that many changes have also taken place in the scope of work organisation and organisation of managerial duties.

...In practice, when we changed our organisation, the administrative organisation grew a lot. Earlier, I had only one manager over me. Now, at worst, I need to discuss a given issue with as many as 5 bosses at different levels of organisation. This means that we do not have clear ways of solving things. It takes a lot of time and it means losing money and resources for the administrative work. Lecturers have much more administrative work than earlier. A researcher's "main duty" is to apply for finances.

According to another person talking about organisational changes,

...The leadership has changed a lot in North Karelia University of Applied Science (NKUAS) since 1992. When we started as polytechnic (later "university of applied sciences"), big changes in the organisation occurred, e.g. headmasters lost their positions to continue as bosses of their "campus." The directors of degree programmes became the most important bosses. It was a problem at the headquarters because the president had about 20 directors to lead. Principal lecturers were also under his leading. The president had about 40 development discussions a year. I understand very well why our new president wanted to change the organisation so that he would have only five centre directors instead of 20 programme directors. The principal lecturers were moved under the programme directors already years ago. This new change has been positive. (Finnish, man)

The opinions of our informants profoundly differ depending on the work carried out at polytechnics and universities. We understand their stories as original ones and we appreciate the opinions of people as there are, according to the narrative theories. That is why, we cannot make any generalizations.

Finnish lecturers also emphasise the problem of a loss of involvement, which is related to introducing short-term contracts and frequent applications for extending employment. It makes life uncertain.

...When people are nominated for temporary posts, they fight like cats and dogs for keeping their positions. No methods have been rejected...

Polish lecturers point to the changes in the appointment of deans after the economic transformation. A Polish lecturer expresses his ideas as follows:

...At my university, leaders (e.g. department heads, deans of faculty and directors) have more financial responsibility than before. They also bear more responsibility for their team's progress (e.g. scientific careers of group members, adequate work conditions). The leader holds also personal responsibility for the health care of his/her faculty. In the last two years, we have been required to have vision exams and exams testing voice control that are very important for teachers.

This statement shows the changes in the area of formal duties but does not refer to the relations which, according to the informants, undergo very slow changes. A Polish lecturer says that

...the leadership style of the university has not changed much during the years. The university is a big and structured entity which stays very conservative in the style of leadership. To me, unless you are a professor, you don't feel the freedom of shaping the institution. Of course, we can have our little initiatives, but we don't feel that we make a difference. A good thing is that you are a fellow researcher so among colleagues, including professors, there is a nice supporting atmosphere.

The above opinion reveals small changes in the hierarchy at universities but, at the same time, emphasises radical changes which have taken place in the attitude to students.

...Regarding the students, lecturing has become more difficult. On the one hand, due to the fact that students are less subordinate, it's harder for them to concentrate and they definitely lack good manners in comparison to the students from a couple of years ago. To me, it's because of the teaching reform and the "new simpler times." On the other hand, as the age distance grows, I acquire more and more authority...

Then, an opinion of another Polish lecturer (a woman) shows that there have been changes in values appreciated at universities:

...some years ago, professors were natural leaders of departments. They governed employees in a very strong authoritarian way. Today, workers (professors too) of the university are more busy earning money outside the university, which means that they have no time for managing a faculty or department. It is not so important for them (not so profitable). They delegate duties and power to younger workers. Today, at Polish universities, it is not enough to be a boss in order to be a leader, you also have to show that you are a successful person, you publish a lot of scientific books and articles and you make a success of getting money from your work...

Another opinion devoted to this issue (Polish, man):

"Pursuit of money" is very popular also on an individual scale: many teachers – especially professionals in business administration and economics – have positions in many higher schools, other institutions and companies. Multiple employment is used in prevalence by private business schools which pay much more than public entities.

One of the informants (Polish, woman) also points out to the changes in relations with subordinates as well as to unhealthy relations when a boss can do a lot for its employees, e.g. develop their career or sign a financially attractive contract.

...Workers are more self-confident than earlier. They discuss orders given to them and sometimes they do not want to do them. The situation is changing faster than earlier and the management system is more democratic than some years ago. But when the boss of a department or faculty is able to help you to get money, for instance, by finding a job for you out of the university, you will accept all his conditions...

A further issue, which causes an ethical dilemma, concerns the situation described by another informant (Polish, man). He emphasises that

About half of the Polish students pay tuition fees. All students learning at private universities as well as part-time students in state-owned schools have to pay for their education. So, every student who is dismissed for poor results brings a financial loss to the university.

Moreover, it is worth mentioning other worrying and unethical situations. According to the same informant (Polish, man):

One can observe a typical behaviour of business teachers (those who are employed in several schools at the same time – author's note): "In my lectures, I have provided you with all the information that is needed and it is your business to master the subject (I have no time to check up your progress)." The effort put into improving students' knowledge and skills requires additional time and, for teachers, means a loss of money they could earn in other institutions (school or company).

He continues:

There are, of course, some academic teachers who carry out in practice their individual mission – to give full time and effort to the students. Unfortunately, they are in minority and are often susceptible to forced changes in their behaviour under the influence of less scrupulous colleagues.

It is encouraging that the situation is undergoing some changes because of modifications in the legal system which are aimed at reducing the number of posts an academic teacher may hold at a time in Poland (to two, in practical terms). More emphasis is also placed on scientific achievements and the quality of education.

4.2. Good and bad practices of leadership at universities

A Polish lecturer (man, chair of the department) lists problems a leader often faces:

Leadership is definitely hard work. Leaders are the first to arrive in the office, and the last to go home. Work also oftentimes carries into the weekends. Leaders responsible for filling in academic schedules will also fill in the gaps by taking the least desirable classes, those off campus and in the least convenient hours.

Similar conclusions are drawn by a Finnish lecturer (woman):

Work at the university is hard. You need to do your lectures beforehand at home, then you are in the classroom with your students, then you are reading papers produced by the students, etc. You have 1,600 hours/year – your working time. Every year you negotiate the number of hours you can devote to this and that. Typically, the time has been divided according to the courses. If you give, for example, a 4-student-point course, it means for the students 32 hours in classroom and 76 hours of independent working. The lecturer has 30–40 hours for planning lessons. If you carry out the same course for the second time, you will have fewer hours for repeating the lessons.

The woman also indicates the unfavourable changes in relations at universities. She claims that effective leaders who are not afraid of introducing changes and making unpopular decisions should prevent such relations.

Sometimes I am very, very frustrated because we are losing the values of humanity, co-operation, communal working, etc. People are becoming more and more selfish and individualistic. No one cares for others. Money is the topic of education!

A Polish lecturer (man) holds strong views on leadership in organisations by saying:

I will use the book Understanding Business by William G. Nickels published by Times Mirror/Mosby College Publishing, St. Louis 1987 (pages 308–313). It includes the description of various leadership styles as well as the 12 golden rules of leadership and the 7 sins of leadership. According to Nickels, leadership is getting others to work willingly and enthusiastically to achieve the objectives of an organization. At this point, I feel the first doubt – what are the mission and objectives of the Polish universities? In the after-communism period of 20 years, the number of students in our country increased from about 400 thousand to about 2 million, while the number of teachers increased only by about 20%. As a result, the quality of teaching decreased substantially. The market philosophy started to prevail without any serious control over quality. The situation worsened by founding hundreds of private universities which totally demoralized the market. Their philosophy is to earn money without putting any bigger effort into providing good products and services to students. Unfortunately, this philosophy was adopted also by state-owned universities which must compete with private schools on the same market.

At the same time, he mentions good leadership practices, such as engagement in educating new staff as well as teamwork on scientific projects:

As regards research activity, the situation is a little better. There are leaders (professors) who moderate the scientific careers of young people – first of all by helping them to prepare their PhD theses. Obtaining a PhD title is necessary to stay at a university so leaders are responsible for their assistants' careers. Very often there are leaders who pick up a subject of their thesis, show the scientific material to study and take, as a tutor or supervisor, the responsibility for the quality of the doctor's dissertation... Such an activity may extend to other research studies, such as scientific publications, domestic or foreign scientific grants, etc. The leader may closely cooperate with his/her staff, on a day-to-day basis. Both parties have an opportunity to fully use the advantages of the leadership concept. (Polish lecturer, man)

He also lists a series of bad practices which cause, for instance, that young scientists have no role models to follow.

Professors, overcharged with teaching activity and the “money pursuit”, often do not even have a gist of what is published in the most recognised international periodicals. So, how could they be good leaders for their assistants and students? Sometimes, they are leaders but very poor and harmful ones. They very often have no will and time to observe how the PhD theses or papers are prepared. It is very symptomatic of Polish higher education that there is no true scientific reviewing activity. Generally, the following attitude prevails: whatever you write is good and merits to be published... In my career, I have had two cases when assistants with poor PhD theses refused to cooperate with me due to excessive, according to them, requirements. They chose other supervisors who accepted their theses as they were. The poor leaders-supervisors easily find the like leaders-reviewers who accept the theses which have nothing in common with in-depth research. Fortunately, some time ago, I was asked by a poor leader-supervisor who acknowledged me as a reviewer with higher requirements to improve a PhD dissertation of one of his students.

A Finnish lecturer expresses positive opinions about leadership at his university:

Everyday leadership is now OK. We have education and development managers working as the bosses of lecturers and principal lecturers. Many lecturers have more than one boss when they are working in different centres. It may sometimes cause problems, for example, when it comes to choosing a meeting to take part in. I have no problems. Cooperation is very good with all managers and leaders I deal with. Also the culture at Wäertsilä campus is really good and cooperation with engineers is nice. I feel that we are on the same level with our bosses because we are specialists. It's easy to have discussions with anyone. We have no hierarchy as I feel. No special tools are involved, we are just talking with each other. (Finish, man)

The following issues should be taken into account when considering differences in leadership observed at universities by Polish and Finnish lecturers. In the first place, the transition period in Poland should be mentioned as it involved a number of changes in values and customs. The pressure on achieving success increased since it is part of the set of duties a capitalist has, and in particular a post-socialist, in the country which strides towards capitalism. Since the political situation in Poland is still less stable than in Finland (the system of science and higher education is undergoing massive changes), people tend to be

more willing to express critical views and pay attention to alarming situations which usually accompany profound transformations.

Both Polish and Finnish lecturers see the changes in the mission, aims and values of the universities. Both groups of lecturers highlight the conditions of employment which are becoming less and less stable depending on an employee's achievements on the one hand, and personnel demand during, for example, population decline, on the other.

4.3. Leadership styles and tools effective when training, motivating and encouraging employees or students

The way a leader assumes leadership and sets up the rules of future cooperation are of considerable importance for creating successful relations with his/her new team. A solution presented by the head of a department, a man from Poland, may serve as an example of good practice.

When I assumed the position of the head of our department, I invited each faculty member of our department, consisting of 28 members, for a 30–60 minute personal, face-to-face meeting to get to know his/her academic background, present status, working conditions, and the vision of their personal development (e.g. earning a new degree, seeking additional training, etc.). These meetings also served as a sounding board for complaints. I encouraged 2 of the 28 faculty members to meet the standards for professorship; the next 5 members were encouraged to advance their research activities in order to meet the standards in the near future. These personal meetings helped me to make the atmosphere at work warmer and more friendly.

Below, there are several opinions on practices developed during lectures.

A Polish woman, teaching 9 years, talked about her everyday experience of leadership in the following way:

It has been changing over the years. Once I found it effective to show and to create opportunities for students (opportunities coming from studying, engaging in students organisations, etc.). Nowadays, the students are more active, they create opportunities for themselves (they work a lot) so actually motivating them to study has become harder. I have become more and more convinced that the most effective leadership style is that of a dictator; it works especially with younger stu-

dents. The participatory approach, i.e. engaging them in setting their own goals, is not so much effective, especially with big groups and with a really limited amount of time per person. However, I think that the key issue is to make them interested in something. And the best way to do this is to show examples of how they can use the knowledge in the future. Of course, making the whole teaching-learning process very transparent by explaining the grading system in detail helps a lot. During one of my classes I asked students to give presentations. At the end, the students were engaged in the grading process and graded presentations of their colleagues according to the criteria we had established before. I could hear the rumours – “let’s give everyone the same highest points”, so I said that if they (the group) graded the presenters fairly, then I would take it into account and reward the best presentations, and if they gave equal scores to everyone, I wouldn’t take their grading into consideration. It worked.

A Finnish female lecturer said that:

I prefer leadership/leading/teaching as “walking with you” (compare, for example, the studies of Paolo Freire). Education is a strong “weapon” for changing the world and workplaces. Perhaps I am too idealistic, but I see that a good leader is proactive, future-oriented, multicultural and very human-minded. Nowadays all people forming the educational organisations are well educated. We cannot assume that these people need very sound advice – just the opposite: well educated people need freedom to do their work as they want. The effect is what counts most. Everyone has his/her own goals in life and work; the duty of a manager/leader involves building opportunities to compare two topics: personal life goals and professional goals. This also means that leaders need to have life-long education. You cannot survive with outdated knowledge, you need to constantly study and develop yourself. One cannot say which theory of leadership is best. I would like to combine many kinds of leadership theories and styles – if I were a boss. It also means that the leader should have in-depth knowledge of themselves before entering into the world of leaders and managers. In Finland, we often refer to “the sense of the farming man/woman” which is a good leadership method – lead people as you would like to be led.

4.4. Influence of gender on leadership or teaching at universities

Three Finnish and two Polish informants argued that the top of their organisations were occupied only by men. Since women constitute the majority of the workforce, the male minority took the power into their hands. This discussion was continued by a Polish lecturer (woman) who said:

...Maybe women from the Institute preferred to stay away from those positions of responsibility, to be more passive and managed by others, but I found out that it was not true. Men simply did not want to give women a chance to be leaders. They have their ways to reserve those best posts for themselves. The conclusion is quite sad for women. It seems that even though the situation for women is changing in contemporary society, leadership still remains the domain of men.

Below is an opinion of a Polish male lecturer who emphasises the diversity of academic staff:

In Poland, it is easier for men to start a scientific career mainly due to tradition and culture. Most of the technical programs are male-oriented and staffed by male faculty members. It seems to provide better communication when teaching. Gender and age of faculty members are taken into consideration when scheduling classes in Kraków or in satellite centres located outside the city. It is my responsibility to make sure that faculty assignments allow each faculty member to have the opportunity to be effective in his/her environment.

A Polish woman (teaching 9 years) argues that:

...women usually pay more attention to detail and their leadership is more soft, more focused on motivating and encouraging others. Men usually present a more dominant style and they are less willing to change their approach to leadership. Women experiment more. The university is "ruled" mostly by men.

One Finnish business-educated man says:

Gender does not affect our NKUAS. This is my experience. We are colleagues and I like to cooperate with everybody.

Yet, a female lecturer from Finland observes some improprieties in mutual relations:

When I entered the educational world of applied sciences, I met a man who made “below the belt” jokes. For me, it was very stupid and childish. Also, in the room of the IT men, there were calendars of nearly naked women hanging on the walls. I said that this was not accepted in many European countries – they thought that I was stupid, old fashioned and feminist (in the negative sense). Anyway, the idea was to treat women as “tools” or “toys to play with” for men – not as professional lecturers.

Another female informant emphasises the problem of sexual discrimination and says:

...Some people are very afraid of speaking about equality issues, for instance, gender. They even do not want to know compulsory legislation (look at Finnish acts <http://www.Finnlex.fi>) or look at the Ministry of Health Care and Social Affairs/Gender Glasses (http://www.stm.fi/en/gender_equality) which is carrying out projects on equality issues. What did I do? Firstly, I tried to speak about it, then I noticed that this was a loss of time. Now, I just do my work. Sometimes I try to explain the equality issues via metaphors, hoping that someone can understand the deep meaning of them – even between the lines... The salary of men in the technical departments is about 500 € higher than the salary of women in the business department or in the social/health care. This has a long cultural tradition: the technical issues are more valuable than other topics of teaching. At the top of the hierarchy, there are no women. In the middle, at the management level, the division is 50/50.

Even though the EU member states have made attempts to carry out the policy aimed at combating discrimination of women on the labour market, it is still this group that is most exposed to discrimination on the EU labour market, both in the context of job application as well as job performance. In EU, women earn, on average, 15% less than men. In Poland, this disproportion is even greater (about 20%) (based on the report of December 12, 2006 by Sedlak and Sedlak, www.wynagrodzenia.pl).

According to the Eurostat surveys, jobs performed by men and women in the EU are not alike. In the research sample of persons employed full time, 30% of women and only 10% of men performed office or administrative tasks; 47% of men are physical workers or work in industrial plants, whereas only 18% of women work on equivalent positions. On average, EU blue-collar workers are paid better than white-collar workers. What is more, overtime is usually paid to physical workers, that is, men. Women constitute the majority among the low-paid retailers.

5. Conclusions

To sum up, it is interesting to analyse the tendencies which emerge as a result of the research. The previous years show that the aim of education at universities has changed and is considered in more business-like terms. More attention is paid to the material side of the achieved results. EU membership involves global thinking and international activity. Because of the changes on the labour market, lecturers have to grapple with the problem of job insecurity which definitely influences relations at work and their involvement in work.

It turns out that despite a long fight for equal rights, differences in treating men and women are striking, not only in Poland but also in Finland. It may be surprising since as far as gender equality is concerned, the Nordic countries are the leaders. It is evident from the special report of the World Economic Forum that Finland, Norway and Sweden are unbeaten as regards gender equality.

According to the Polish lecturers, leaders commit a number of errors concerning both relations with students and the leaders' careers. High ethical and moral standards are essential in preventing the distortion of the academic environment. Ambiguity and sensitivity of the subject make it difficult to introduce detailed regulations and laws.

The opinions of the informants provoke reflection that managers at universities lack leadership skills. This coincides with the regularities described in the subject literature. Only some statements highlight the aspects of transformational leadership where aims of leaders and their supporters blend into a unified whole and the leaders engage themselves into achieving the aims.

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Application of Kirkpatrick model in a project re-qualifications of employees

Abstract: The role of evaluation of training projects has changed considerably over the last several years. An important influence on these changes and raising awareness concerning the use of different evaluation tools have got the requirements in the industry. This article presents a synthetic form of a primarily practical dimension of the evaluation using the Kirkpatrick model for training during one of the development projects in the automotive company.

Key words: efficiency, process approach, training

JEL codes: O150

1. Introduction

Measuring the training results and their effectiveness was defined as one of the key trends that will have impact on the next few years in human resource management. Under the present conditions the company expects the cost of yielding any specific results (Jasiński and Janiak-Rejno 2004). This is particularly evident in the automotive industry. The characteristics of automotive process management allows us to understand the need of defining measures of effectiveness of any activities. The measurement of training effects and translating the objectives throughout the organization should confirm the meaning of actions.

Despite many sophisticated models for the assessment presented in the literature, in practice, companies have used a simplified method of testing the effectiveness of training which are not closed into the one coherent model. This is a result of insufficient awareness of the significance of those models (Jarmuż and

Witkowski 2004: 254). While the need for staff training has already been seen in terms of the axiom, increasing the number of activities pertinent to the measuring of effects of training for many organizations is still a big challenge. It is worth noting that the evaluation process is not detached, existing independently from the remaining part of the training, which is attached at the end of work “because is just a need.” Evaluation is an integral component of the all training process, resulting directly from all of its phases and simultaneously having an impact on each of them – even if they are not in relation to the current training program, it is certainly to his future studies (Kossowska and Sołtysińska 2002: 34).

This paper presents an approach to assessing the effectiveness of the training project dedicated to workers at automotive company – SPBT Poland, based on Kirkpatrick model using many techniques and assessment tools.

2. Overview of methods

The concept of assessing the effectiveness of training can be defined as a system to collect information and formulate a value judgment of all elements of the resources devoted by the company to the personnel training.

In this context, evaluating the effectiveness of training is very important because it helps to determine what is the effectiveness of test exercise program in achieving its objectives, the extent to which it meets the expectations of workers and enterprises, whether employees expanded their potential qualification, whether the transfer was made and whether the new knowledge as a result of this transfer of expected changes have occurred, which then had a positive impact on the effectiveness of enterprise resource management (Sajkiewicz 2000: 262). As a result, all those involved in the training process receive full feedback in the form of answers to the question: Do training programs represent only the source of costs or are they cost-effective, long-term investments.

An important element in the process evaluating the effectiveness of training is to collect information about training. They can gain from using different strategies and techniques, the choice of which depends on the aspect of the education process and target of evaluation. There are four main objectives of the evaluation, which result from the fact that training take place in the organizational environment. These include (Szczepanik and Arendt 2006):

1. **Feedback.** It supplements the learning process of the trainees, while for the leadership it is an indicator of the effectiveness of methods used and evidence of achieving specific training objectives. It provides assistance in organizing further training in the future. Feedback allows you to enrich the offer of training programs. Knowing the defects and advantages of providing

training helps leadership to develop their professional skills. It also allows you to elicit and use the findings of the assessment based on feedback.

2. **Control.** It makes it possible to link the training system with the aims set by the organization. Control helps to determine whether organized training is useful and what are its costs. It may also help to identify target of the organization, which may be changing the scope of the powers and duties assigned to certain standpoints. This assessment gives people in management positions enabling them to access the information which helps to make the right decisions.
3. **Research.** Evaluation of the training effectiveness is also a research process that allows to enrich the knowledge on the general principles and practices of training. It allows you to explore ways of acquiring information and the factors facilitating the application of acquired knowledge and skills in the workplace. The research also makes it possible to improve the techniques used to evaluate the training in order to provide feedback, control and interference in the training process.
4. **Interference in the training process.** This objective consists of using some measures, not associated with the evaluated program. The assessed have impact on how the training data are seen. Also, the trainers, participants and managers realize that they bear common responsibility for the results of training. Interference in the training process may therefore have a significant impact on human resources management.

The beginning of interest in the quality of trainings and the first formal attempts at their assessment has taken place in 1960s and 1970s. There were several approaches to this issue. The most important facets to the assessment were (Bramley 2001: 23–40) based:

- on objectives related to the employee behavioural change as a result of training;
- on the goals, some of which should be achieved already during the training, the others directly after it, and yet another in the long run;
- on illumination, consisting in describing and interpreting phenomena and not on their measurement and prediction;
- on systematic assessment of the whole system together with the relations occurring between them which form subsystems.

Evaluation is a complex and multistage process. However, for the process to be effective, certain conditing must be met: the specific training standards, benchmarks for comparison, providing information about the objectives, course and effects of training, and an established mechanism, correcting deviations that occurred.

The main part of the audit that functions in the training process is the assessment of individual training projects, whose aim is to obtain feedback about the effects of training and its value for the organization. Literature indicates that the most common approach is to assess the effects of the targets. The Kirkpatrick model was used for its description.

Table 1. Levels of the effects of the training according to the D.L. Kirkpatrick

Level		Goal	Form, evaluation, example
I	Reaction	Understanding employees' opinions on: content, training methods, conditions and organization, adequacy to the needs of the job. The assessment carried out immediately after the training which allows you to change in the future	training evaluation formula
II	Learning	Determination of the degree of changes in skills of training participants (assimilate theoretical knowledge and practical skills)	knowledge test
III	Behaviours	Checking whether and to what extent new knowledge, skills and attitudes are applied in practice. The difficulty of measurement at this stage due to two reasons: first, people behave according to what they consider to be appropriate, therefore also preserve the data, situation can be determined more by factors other than training, and expected outcomes can occur at different times after training or not appear at all	observation of the results of work
IV	Results	The assessment is carried out in terms of tangible benefits for individual employees and the entire organization	employee assessment (the system of periodic evaluations)

Source: own calculations based on: Kirkpatrick (1996: 27–70).

Properly executed training should produce positive results at all levels of evaluation. Extended approach to this model is the concept of A.C. Hamblin.

Table 2. Evaluation of the training model effectiveness according to A.C. Hamblin

Level		Assumption
I	Reactions of participants	Analysis of the personal feelings of trainees in the context of how it was useful to them, what they liked, and which elements can be modified, in addition to collecting the opinion of trainers
II	Learning	Analysis of the learning process in terms of acquiring knowledge and skills. It is based on a qualitative assessment of assimilated material
III	Behaviours at work	Assessment of the extent to which employees can use the acquired knowledge and skills in practice
IV	Organization	It is assessed to what extent changes in labour and employee behaviour affect the functioning of the entire organization in terms of: production, productivity and quality
V	The value of the final	Analysis of the benefits of an organization, such as: increased profitability, survival, development and the benefits that each participant in training has to face. This stage is reduced to determining the extent to which training contributed to achieving specified results

Source: Wdowicz (1999).

A.C. Hamblin introduced an additional fifth level of evaluation of training – as the level of a final objective of social and cultural values. He assumed that training causes a chain reaction: learning leads to changes in the behaviour of employees and this may translate into changes in the organization and the ability to achieve the desired objectives. However, this chain can be interrupted anywhere. Training can be evaluated positively by participants, but its content will not be applied on the job.

Another model shows the four dimensions of training effectiveness analysis (Piechnik-Kurdziel 2000: 46–47):

1. **Context.** At this stage of gathering information on the current situation at the level of organization, personnel problems and inefficiencies of activities and procedures are analysed.
2. **Input.** At this stage of data collection this analysis is necessary for choosing a particular method or form of training, as well as to calculate the return of training expenditures over time.
3. **Process.** At this stage the opinions and assessment of training participants concerning the substantive values and organizational training are gathered.
4. **Outcome.** At this stage the actual consequences of training are analysed.

Just as often encountered in the literature evaluating the solutions applied in the framework of training programs is the cost-benefit analysis for the control group. The primary objective of this study is to compare the expenditure on training with the effects. The evaluation will be objective and training will be assessed at regular intervals until its completion. This method comprises the following consecutive steps:

Table 3. The “cost-benefit” procedure of assessing the effects of training

Stages of the procedure	
1	
1	Selection of the staff for the analysis (those with relevant qualification or working groups at the same level of organization in the company) and their division into two groups, the first of which will participate in the training and the second will be a control group
2	Preliminary tests in both groups of workers in order to assess the baseline level of their competence. Omission of this step is justified only in cases of absolute certainty, when the subjects of training are not unknown trainees
3	Preparation and implementation of the training program
4	Conducting a systematic evaluation by the trainer during his training period using the example of observation of actions performed by participants, analysis of their behaviour, practical tests, the session summary. This evaluation should show whether the training conducted in accordance with the objectives, or whether his conduct should be verified
5	The evaluation of trainees reaction and knowledge tests after the training
6	Evaluate the amount of the total cost of training

Table 2 continued

1	
7	Conducting a systematic assessment at regular intervals, starting from the moment of completion of training. Its purpose is to analyse the degree of permanent transfer of training in the workplace. Its frequency is designed to stimulate new attitudes of employees
8	Comparison of the benefits of training, measured by the level of the work of people who participated in it, the costs incurred
9	Comparison of performance of the group trained with the results of the control group
10	Determining the actual value of training through the calculation of selected economic indicators
11	Monitoring and modifying goals and training programs based on the results obtained

Source: Gomez-Mejia, Balkin and Cardy (1998: 258).

On the basis of our experience, we think that the training has brought the expected result, test performance should begin before the training, in mind the “principle of three steps,” or to have confidence in the success of the training, they should be assessed at three stages: before the start, during and after your workout (Figure 1). Shown in the figure below subjective elements allow the construction to ensure high quality education and minimize the risk of error, thus bringing to an end and thus spillover effects of training on specific, desirable from the viewpoint of companies and individuals, behaviours.

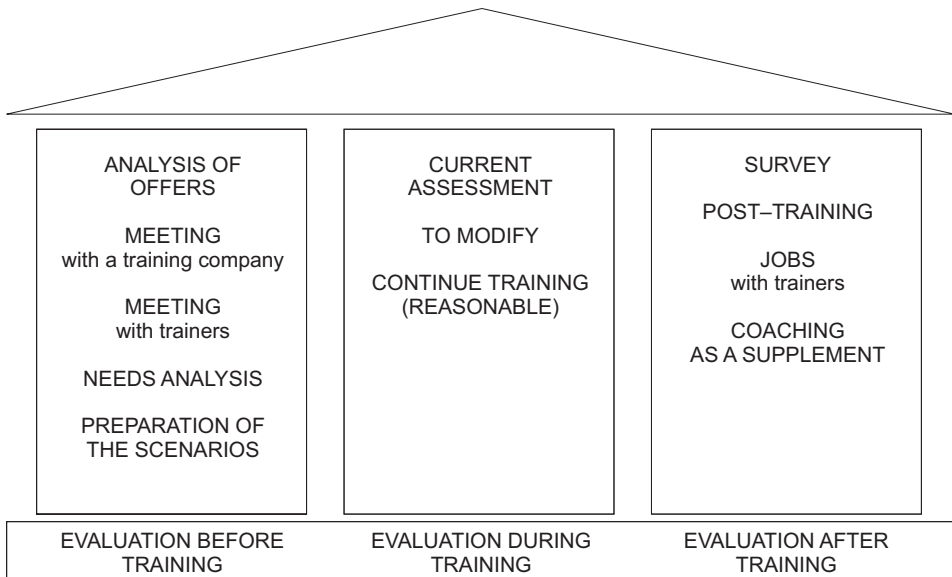


Figure 1. Pillars of assessing the effectiveness of training

Source: Brzezinski (2003: 16).

Professional conduct of evaluation requires the use of appropriate assessment instruments whose selection and manner of application cannot be accidental but must be based on knowledge about the role of individual techniques in the whole process of evaluation and analysis and on the demands of a particular situation. Their brief analysis is provided in the Figure 1.

In the literature we can find other solutions to assess the effects of training. Their range is both substantive and differentiating element in the internal procedure. At this point we would like to draw attention to the convergence of methods and techniques used at different stages of the training process and the possibility of their use. In relation to training needs analysis process the principle remains the same: to identify training needs and develop them means to compare a set of elements considered necessary for effective work at a given position of the person's actual work, the comparison of individual work and a master – and on the same basis is the evaluation of effects of training: individual and comparing the expected (reference). I think that it would be worthwhile to consider the integration of these methods and tools.

Just as often encountered in the literature evaluating the solution in the framework of training programs is a cost-benefit analysis for the control group. The primary objective of this study is to compare the expenditures on training effects. The evaluation will be objective, if it has a dynamic character, and training will be assessed at regular intervals until the end.

Regardless of the many different methods of collecting data to assess the effect of the training project, there are models describing the complex process of measuring the profitability of training investments. One of the more advanced is the ROI mode – calculation process.

3. Efficiency in SPBT Poland – what makes it an important issue?

Polymeric Systems Barre Thomas (SPBT) Poland representing a branch of the automotive industry having ISO/TS 16949 and, as a many organizations in response to the occurring changes, implemented process management. The introduction of this concept resulted in a different perspective on the organization as a set of implemented processes. Using the process management in the management of personnel, allowed to open the way to increase the efficiency of this function by defining the purpose and selection of appropriate measurements. They consequently make it possible to measure the effectiveness of the organization. Recognition of a procedural nature of human resource management has meant that the company must have employees with relevant competence necessary to carry out the processes occurring in it.

The organization continues to emphasise the importance of training and the role of learning, gaining knowledge, as evidenced by the position of these issues in a strategic area of the surveyed companies, assigning responsibility for the said area, a person with power of decision, customizing forms and methods of training, adjusting to new situations, make an organization activities more aimed at maximizing the positive effects of training. This kind of activity is underlined by ISO/TS norm: "The organization should [...] provide training or take other actions to achieve the necessary competencies and to evaluate the effectiveness of actions taken" (ISO/TS 16949 norm). The need to measure the effectiveness of activities in a company such as SPBT Poland, is not only due to respect and upkeeping the standards of human resource management, but primarily it is a requirement of the industry, quality systems and clients. The most important standard is ISO/TS 16949 (Technical Specifications) and one of the major benefits brought by this standard is a process approach to quality management, understood as a chain of mutual correlations between all processes in the company – including human resource management processes – with a strategic position of development and training.

Effectiveness of training is a measure of whether the training activities were well planned, conducted, yielded the expected and desired results and if the cost of their conduct was clear and cost effective, i.e. lower than the final benefits or profits. Measuring the effectiveness of training is to investigate whether changes taking place in the organization are the result of favourable changes in the training or exercises performed to develop the course participants. To work on increasing the efficiency of training, they must be properly monitored and evaluated. To this purpose serve the indicators.

ISO/TS 16949 – the Technical Specification is a set of quality system requirements for companies – suppliers of the automotive market. The quality management system should be an integral part of functioning in the company business management system, and process approach based on the framework should ensure transparency and improve the efficiency of activities.

The process consists in measuring every action by analysing and relevant processing all data and providing the requirements for entry/beginning of the process, which, as a result, leads to a very specific and desired effects at the output at end of the process. The activities within the process are in the form of different activities occurring after the analyse of what resources, tools, methods and indicators are necessary for achieving the success. A good example to explain the process approach in the organization is the turtle diagram, where the entry requirements are supplied by customers, and the process is to ensure their fulfillment and achieve satisfaction with the final result – the output of the process.

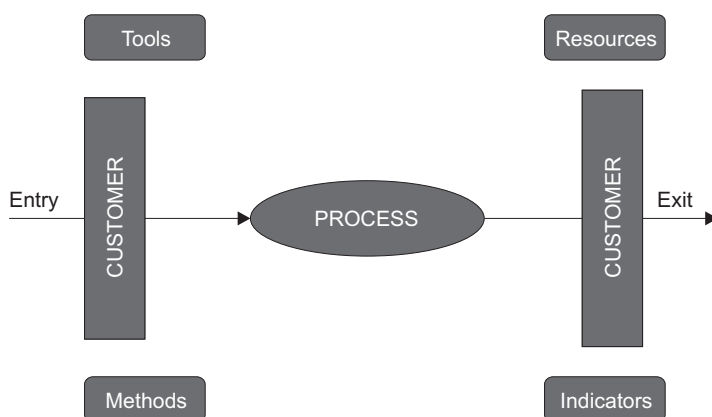


Figure 2. Management of the process

Source: Internal materials of SPBT Poland.

Term often used is that training creates a process of continuous improvement, so it is possible to tell that the process approach according to ISO/TS 16949 has been also applied during the development of skills and dissemination of knowledge among employees of SPBT Poland. Technical Specification puts before every organization which has a certificate of origin the following requirements:

The organization should [...] define the processes in the system of quality management and their application in the organization, define the sequence of these processes and their interactions, define the criteria and methods needed to ensure the effectiveness of alike the operation and control of these processes [...] monitor, measure where applicable, and analyse these processes and implement actions indispensable to achieve planned results and continual improvement... (ISO/TS 16949).

Analysing the process approach in relation to the training system, the input data in this case is study of training needs, and output – the implementation of the targets fixed in their analysis. Having a adequate resources, tools and methods we are able to carry out training, but without monitoring of carefully selected indicators, we cannot define if the desired final result has been achieved. As you can see not only the experience and good practice, but also the specific requirements of the process approach, activate us to execute evaluation of training processes.

SPBT Poland is a production company, in which as many as 60% of the staff consists of employees on workers positions. Since the method and results of work performed by them influence on how the company will be per-

ceived by current and future customers, since 2010 the company invests in the development of the production workers – and has introduced the project – Requalification. Requalification is the improvement and confirmation of workers knowledge in scope of knowing the Labour Standards of SPBT in Poland.

This was one of the largest training projects dedicated for all manufacturing employees (550 persons). Its scope included eight thematic areas:

1. Occupational Safety and Health (in Polish – BHP).
2. Ergonomics or, the best possible adjustment to a job station to increase opportunities stemming from working on it.
3. Environment – environmental protection.
4. Energy saving rules (ZOE).
5. The “5Ss” organization method.
6. Autonomous Maintenance (AM).
7. *Poka-yoke* – a method of eliminating mistakes made by workers.
8. Control plans – the scope of the examination along with the date of goals fulfillment at work (What? When? Who?).

The main objective of the training was to provide employees with knowledge of scope of the standards in the company, equipped in the new competences which then will be effectively implemented in the manufacturing process, in accordance with the rules of quality. A team of internal trainers was engaged in this project. The group consisted of 550 persons. About 45 training sessions were organized – each lasting about 8 hours. The method adopted to evaluate the effectiveness was the Kirkpatrick method.

To ensure the proper conduct of the evaluation process, the analysis of training needs, enabling determination of the training targets, methods, themes and the manner of conducting the whole project was needed. Interdependence is strong – but that allowed a full control over the whole of the training activities, and thus – to create possibility for improvement at every stage.

Beginning of each training project is determined by application of demand by preparing a training proposal by a unit in organization that represents the specified process. To be able to meet the requirements of the customer, it is necessary to accurately define which result must be achieved after the training. Method that is used in such cases is the analysis of root causes – RCA.

Root cause analysis is essentially the approach used to solve the problem which appeared, but it can also be used successfully to search for effective solutions that will be used to prevent difficulties arising. Application of RCA to determine the training needs can help to understand exactly on which elements the particular emphasis should be placed during the training project to achieve the desired result. The most often tool used during the analysis of the causes is the Ishikawa diagram, which provides an easy way to perform the 5Whys analysis. The result of the correctly performed analysis is obtaining the information

about root cause of the problem and, in correlation to training programs, a very precise definition of the primary goal of the training project. After determining the purpose of training, and thus the expected results, we can proceed to its implementation, and consequently – the evaluation.

Evaluation of this training project was a process of measuring the changes that have occurred since the beginning of training, until the application of this knowledge and skills in a real-life situation. Reasons for it were several. The most obvious was to verify the extent to which training program has enabled the goal achievement. Four levels meant the next steps of the evaluation process. Each of them was important and had a direct impact on the next level. Experience has shown us that going to the next level – the evaluation process – was more difficult and time consuming.

Reaction for the training make it possible to know the employees opinions on: content, methods of training, trainers job, usefulness of the training materials, conditions and organization, adequacy to the needs of the job. Evaluation was conducted directly after training. It was used as a tool for evaluating the anonymous poll – especially prepared for the needs of this training project (Figure 3). Appearance of the reactions – it was not significant. It was important for it to be positive. If such a reaction does not appear, it would most likely reflected in the employees motivation to learn new content and participation in the training. Receiving positive results of the survey does not guarantee the proper assimilation of knowledge, it is definitely a negative response to the deterioration of the whole process.

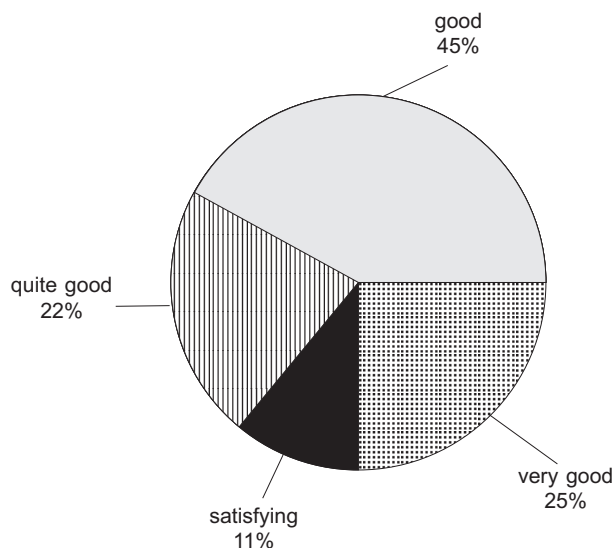


Figure 3. General opinion after the training “Work Standards”

Source: Internal materials SPBT Poland.

At this level of evaluation, in addition to the overall assessment of the training, employees have the opportunity to evaluate, among other things:

1. Substantive content:
 - a) "Does the content of the substantive training suit your expectations?"
 - b) "The level of presented topics in relation to knowledge."
2. Trainer work:
 - a) "Working with the group. Does the leader activate members of the training group?"
 - b) "Does the trainer check understanding of content?"
3. Assessment of training materials ("The quality and usefulness of training materials").

Important at this stage was to evaluate the work of trainers. The data obtained were the basis to improve their technique and methods of working. This was an important and indispensable factor in their professional development.

The use of questionnaires or interviews in determining the response to training is the most common way of obtaining data. The second source of information about the level of reaction/satisfaction that we used were the results of surveys of employees. Employees many times pointed out to the training "Working Standards" as an event that positively affected their attitude to the duties to be performed. It was therefore likely that the transfer of knowledge during training will occur. Evaluation of reaction helps to identify factors hindering and facilitating the achievement of the objectives of training and learning.

The second level of evaluation was – **assessment of learning**. Thus, to determine whether and to what extent under the influence of training attitudes, knowledge and skills have been changed. It was necessary at this stage to refer to defined before the training – goals. Evaluation subject was here the level of knowledge, knowledge of procedures and rules of conduct and the level of the job realization. It is used a two-time measurement of knowledge: pre-tests (to determine the qualifications of the input) and post-tests (to determine the qualifications of the output).

Although the project proved to be time consuming – we found the relationship between growth and efficiency of the qualifications for each employee. The results showed that the average increase in knowledge was since then doubled (Figure 4).

Measurement of knowledge was well after 3 months after completing training. Direct production employees met with their superiors – where one of the obligatory points of the meeting was "Standards of work – theoretical issues."

It is worth mentioning at this point the involvement of line managers in the whole training process – the assessment. Supervisors first participated in the training of Standards – and therefore were aware of what they teach to their employees. Adopt the attitude of "I'm interested in what you learn and I will

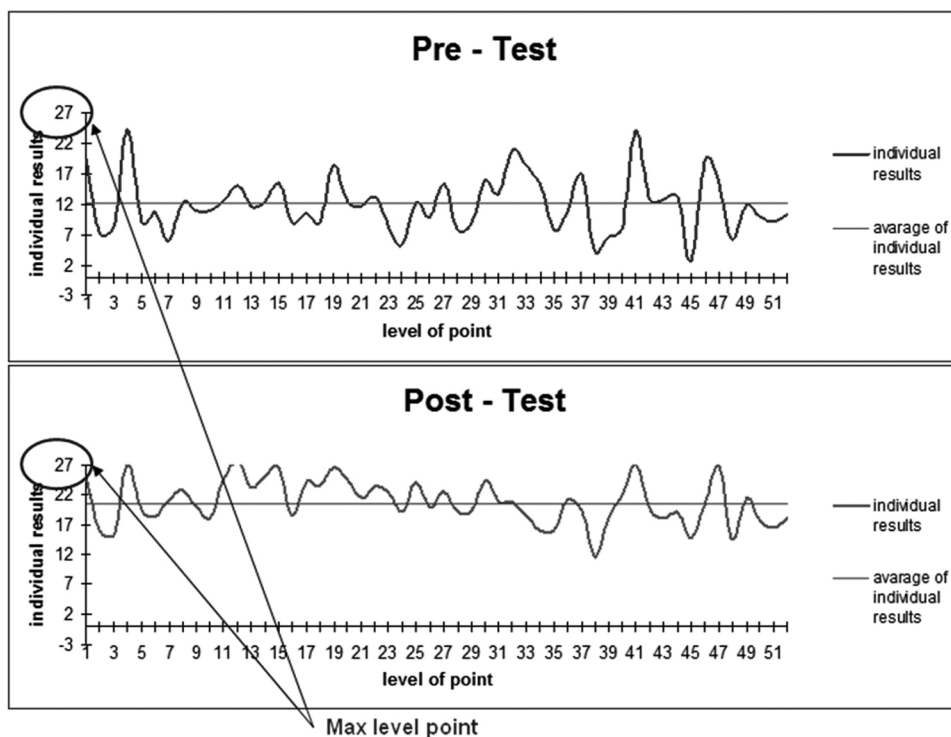


Figure 4. Pre-test and post-test results

Source: Internal materials of SPBT Poland.

help you take advantage of this in practice,” allowed to start changing the behaviour of the employee. Supervisors were also kept informed about the test results of their pupils. Communication delivers a significant role here.

Both the level of response at the level of training and learning are most often carried out before the formal closure of the training project. Bearing in mind that they are not measuring the effectiveness of training, but its assessment, attention was paid to the third level of evaluation: behaviour in the workplace. It is to determine whether and to what extent the newly acquired knowledge, skills and attitudes are applied in practice. The difficulty of measurement at this stage was due to two reasons:

- employees behave according to what they consider to be appropriate, because behaviour in a given situation can be determined more by factors other than the training;
- expected results may occur at various times after the training or do not appear at all.

Additionally, in order for a change to occur four conditions have to be fulfilled: the worker must want to change their behaviour in the workplace,

need to know how to do it, should be guaranteed a friendly work environment and should be reinforced for every positive change. In creating a friendly working environment the greatest immediate supervisor was involved in the production line.

As an evaluation tool used at this stage of the evaluation interview – a system of periodic evaluations and audits of staff awareness. These were the activities carried out directly on the working place by a quality technician.

Evaluation of results were made from the viewpoint of the final effectiveness of a person's participation in a training program for the production area in which it operates, and the entire organization. Training outcomes were measures of qualitative indicators: the results of audits, staff awareness, the level of shortages, and the results of internal audits on the production line. These were the measurable indicators, according to the management process – and they were used as an input and an incentive to improve in the next year training for production workers.

Thanks to this level of evaluation it was possible to show, on which sphere of practical business training had an impact.

4. Fixation effects of training

An action allowing for the consolidation and deepening of understanding of the content transmitted on trainings is **repetition**. It shall be carried out some time after training – for example, six months after the training many of the necessary information is forgotten. Moreover, the knowledge and skills acquired during training were by this time confronted with the realities of everyday work. They could therefore give rise to new questions and doubts and it is also possible that the experiences have raised a valuable complement to training content. Exchange of experience is therefore an important element of actions after training.

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E-management of human capital as a chance of transforming “brain drain” into “brain gain” in Silesian region

Abstract: The paper presents the strategy of transformation of the “brain drain” into “brain gain” in the post-Soviet military industry zones of European Community, very important for the revitalization of Silesia and the Polish Central Industrial Region (COP) as well as post-Soviet military zones, which belong to the economically and ecologically most degenerated regions of Europe. Of studies conducted during last 6 years, 50% were made by European Academy of Technology and Management and another 50% by European Business Club Association e.V. We show that the applying of ICT to the transfer of know-how from the regions of Valley of Technological Civilization Lake Constance is a great and real chance of technological and ecological restructuring and revitalization of Silesia, belonging to both: Polish Central Industrial Region and East German States (Länder) of the Soviet occupation zone and the regions of Bohemia and Moravia to the most economically and environmentally damaged regions of Europe.

The demographic, technological and ecological disaster is a joint consequence of brown and the Soviet fascism. It is emphasized that the enormous losses of human and financial capital in post-Soviet military zone in Silesia were the result of

- forcing the emigration of 6 millions of the most valuable citizens who built one of the most developed regions of Europe and the world.
- theft and waste of capital from overuse of over 3 billion tons of coal and 100 million tons of steel.
- the largest ecological disaster in Europe.

Key words: E-management, brain drain, human capital

JEL code: J24

1. Introduction

In knowledge society, mobile, intelligent human capital is the most important factor underlying a region's or nation's ability to innovate and be competitive. It constitutes a net of brain gain for the countries with the highest level of economic and personal freedom. At the same time the opposite phenomenon known as brain drain leads to a serious loss of talent for the countries with high level of bureaucratization, corruption and nepotism. In European Community to such category belongs Poland classified according to the World Economic Forum's Global Economy on the place 41 i.e. as the country with the one of the highest level of bureaucratic persecution of inventors, entrepreneurs and all hard-working, honest citizens in European Community, which means the very low level of economic and personal freedom (Przybytniowski and Stasch 2010).

In the paper I present the strategy of stopping and reversing the brain drain from Silesia and Central Industrial Region (Centralny Okręg Przemysłowy) in Poland (Stasch and Theile 2007), based on the experience of Bangalore and Hyderabad (wikipedia.org, Nair 2005, www.inhome.rediff.com/money/2004/nov/30spec.htm). It means that the impact of our analysis and conclusions base on success of Bangalore and Hyderabad in stopping and reversing brain drain by using the internet superhighway for e-transfer of know-how from and to Silicon Valley (Stasch and Theile 2007). The really incredible stories of both first Indian centres of knowledge economy show how the e-exchange of knowledge can stop and reverse the brain drain, creating optimal opportunities to utilise the human talents, making regions financially and scientifically most sound and competitive in the world (wikipedia.org). Recently, the Bangalore-Hyderabad-Silicon Valley development model is applied in more than 300 similar Indian, Chinese, Indonesian and Malaysian centres confirming that the application of ICT is an unique and most effective way of the development of region and countries with the highest level of bureaucracy, corruption and nepotism (Yearly Worldwide Index of Economic Freedom 2010).

My results confirmed the conclusions of analysis of economical and social processes in Middle and Eastern Europe performed in the years 2000 to 2010 by scientific teams of: European Academy of Technology and Management, European Business Club Association e.V. (www.eu-bc.eu) and Federal Foundation of German Business (www.ses-bonn.de). The results of this analysis show that in Poland, like earlier in India and China, exists a strong correlation between Polish brain drain, i.e. emigration of 4 million of skilled, very well educated and most dynamical Polish citizens and the increasing bureaucratization, bribery, nepotism and criminality in years 1994–2007.

It should be noted that, taking into account the time of Soviet occupation (1945–1989), altogether 8.4 million people emigrated from Poland to: Germany, Great Britain, the Netherlands, Sweden, the United States, Ireland, Canada and other developed countries.

For these reason the period from 1994 to 2007 in Poland can be described as the time of the return of post-Soviet political, economic and social policy resulting in the bureaucratic and fiscal persecution of entrepreneurs, inventors and all others, honest citizens. The consequence of considerably lowering of economic and personal freedom and security was stopping of the Polish Economic Wonder, the effect of the reforms of Wilczek and Rakowski and Balcerowicz and Bielecki. It should be emphasized that if the growth rate of 7.2% GNP resulting from those reforms had been sustained, Poland would have reached the economic GDP per capita of Germany and Switzerland, respectively in the 2016 and 2020 (Table 1).

Table 1. The simulation of GNP (ppp) development in Switzerland, Germany and Poland in years 1998–2020 assuming the 7.2% growing rate of Polish economy

Country/GNP (ppp) € in the year	1998	2016	2020
Switzerland	26,200	32,800	33,180
Germany	21,080	25,840	27,240
Poland	8,640	26,250	34,120

In terms of the labour market, it means reversing the brain drain into brain gain connected with the necessity of employment of 3–5 million citizens from Russia, Ukraine, and Belarus. It should be emphasized that the best way of preventing brain drain is always stimulating the growth of personal and economic freedom. This fact finds its confirmation in the history of economic and social progress in: Switzerland, Ireland, Sweden, the Netherlands, Finland, Great Britain, Germany, Japan and more than 20 other countries.

In the next point, I show that, fortunately, today exists also another alternative strategy of reversing the process of intellectual and biological (demographic and genetic) brain drain suitable for heavily bureaucratized and corrupt countries. This possibility is connected with the application of the development strategy of knowledge society known as Bangalore-Silicon Valley model (Stasch and Theile 2007).

2. Turning “brain drain” into “brain gain” by knowledge exchange

The possibility of stimulating the brain gain (brain circulating) in the countries with the highest level of bureaucracy and bribery are represented by the incredible stories of the emergence of Bangalore and Hyderabad, the two India’s “Silicon Valleys.”

Those typical sleepy Indian towns without future were known in 1990 only for their relaxed lifestyle, gardens, tree-lined streets and pleasant climate. Today Bangalore and Hyderabad are fast-paced Indian centres of knowledge society and knowledge economy with 7 and 5 million inhabitants, respectively. They have become the first of the most important technology and innovation hubs outside of Silicon Valley and Civilisation of Lake Constance (Bodensee-zivilisation) (de.wikipedia.org, Stasch 2008). In the last year both e-cities expected full year revenues of \$21.7 billion to be at least 30% higher than the last year’s figure of \$16.12 billion. In the ICT sector they experienced a 20% growth to \$11.05 billion in its software and back-office outsourcing exports. The cities are India’s aerospace hub, home of Hindustan Aeronautics Ltd. and National Aerospace Laboratories, as well as a number of global aerospace companies including Pratt and Whitney, CAE, BAE Systems and Boeing. The last one is doing research in aerospace materials, structures and manufacturing technologies, as well as developing a range of cutting-edge technologies for various 787 avionics systems. Bangalore and Hyderabad (Nair 2005, www.inhome.rediff.com/money/2004/nov/30spec.htm) are also India’s largest biotechnology clusters and home to 55% of the country’s biotechnological firms. They have been joined by a number of global pharmaceutical companies like Astra Zeneca that are doing research and clinical trials. Recently, both Asia’s fastest growing global e-cities started to create a new phenomenon, the reversing of Indian brain drain, in which the knowledge and intellectual capital is being transferred from the host to the home country. As a result of this processes, in the years 2006–2010 more than 70,000 Indian high tech specialist have started to return after getting the education at the best US universities and/or working in the United States.

To describe this process and positive economic, demographic and social consequences, the term “brain circulation” has been coined (Beine, Docquier and Rapaport 2001, Tung 2008). It should be noted that the most important properties of “brain circulation” are not the simple mobility and the impacts of high-skilled returnees but the ICT supported e-sharing of knowledge between member of the diaspora and specialists in the home country (Beine, Docquier, and Rapaport 2001, Brown 2002, Tung 2008).

It means that the recognizing of fundamental human right to migrate freely, looking for the personal and economic freedom as well as the perspectives of

interesting job is beneficial to both destination and home countries. The success of Bangalore, Hyderabad and hundreds of similar Indian and Chinese centres of knowledge economy show that using of the IMCT (internet, multimedia, computer and telecommunication) technologies is possible without emigration to participate in the economical and scientific freedom and technological, environmental progress of leading global technological valleys. The typical examples of interesting e-jobs created by application of ICT technologies are (Stasch and Theile 2007):

- e-software development,
- e-computer system management, e-research in e-development centres;
- 3-dimensional tele-engineering,
- 3D-CAD e-Design,
- 3D-CAD and tele-architecture,
- tele-medicine,
- e-Commerce (B2B, B2C and all other fields of e-business and m-business);
- 3D Internet- and multimedia-supported tele-education;

From the point of view of social development of human resources, the application of Bangalore-Hyderabad-Silicon Valley experiences means the accelerating of development of knowledge society by:

- stopping and reversing the process of the social and economic exclusion and emigration of the citizens from the most disadvantaged regions of Europe;
- accelerating the e-inclusion by e-transferring (ICT supported) of the new technologies and ecological know-how;
- supporting of local e-communities development (e-cities and e-Valleys);
- combating of the social exclusion of highly educated mothers by opening the new chances of e-job market;
- creating of the new job chances for all groups with physical disabilities.

The next point I will devote directly to the problem of reversing of Polish brain drain.

3. The strategy of accelerating economic, social, educational and cultural development of Silesia by using the knowledge flows of 3.5 million representatives of Polish-speaking diaspora in Germany

As the first step of reversing of Polish brain drain we propose the using of “diaspora option” (Ding 2007, Mahroun, Eldridge and Daar 2007, Tung 2008) to accelerate the economic and social development.

The reason for the choice of Silesia is that 80% of 3.5 million representatives of Polish-speaking diaspora in Germany emigrated from this part of Poland.

In the “diaspora option” (Ding 2007), the highly-skilled Polish emigrants do not need to return home physically to take part in the process of acceleration of high technology. The development of Bangalore-Hyderabad-Silicon Valley e-clusters shows that this option is very effective first step of the increasing of the human capital of home country. It is also opposed to traditional, political approaches to deal with brain drain, which had a little impact (Beine, Docquier, and Rapaport 2001). For these reasons the “diaspora option” should be estimated as the first step on the way of reversing of the process of intellectual and biological (demographic and genetic) extinction of Silesia and Polish Central Industrial Region caused by the economical and social semi-stagnation connected with decreasing of economic and civil liberties in the time from 1994 to 2007.

Economically, because of the biggest brain drains in the Europe, Poland is losing annually more than 240 billion €. But the main, real loss is not monetary but biological (demographic and genetic). It is connected with rapid decreasing of the Polish human capital (talent pool level), the irreparable damage done to any nation.

It should be emphasised that the recent Polish immigrants are not the small farmers from Southeast Poland, like in the 19th century. The majority of them belong to the dynamic and well educated young citizens looking for

- personal (inventorial and entrepreneurial) freedom;
- interesting job opportunities;
- personal and family security and cash.

It means that the deciding reason for the emerging Polish brain drain is the frustration of young highly qualified professionals in their twenties and thirties about living and working in Poland. In fact, in the time from 1994 to 2005 such negative factors as:

- bureaucracy,
- corruption,
- nepotism, and
- the crime rate in Poland,

were systematically increasing. Also today, it is far more difficult to get, the honest way, a good job in Poland than it is inside of Germany and any other 35 countries with high level of economic and personal freedom (Yearly Worldwide Index of Economic Freedom 2010).

The reasons for lack of jobs in Poland are:

1. The politicized persecution of the several thousand successful, brilliant entrepreneurs like Roman Kluska, owners of JTT, or Ryszard Krauze.
2. The continually reinforcing of bureaucratic schizophrenia and persecution of skilled citizens by differing systems of tax allowances **which nobody can understand and exploit.**

3. The atmosphere in which the Polish inventors and entrepreneurs have extreme difficulties of legal job creation by setting up and developing a business.

In fact from 1945 to 2007 in Poland, like in southern Italy, there was only a small difference between revenue departments demanding fiscal and racket of Cosa Nostra, Camorra or N'Dranghetta described long ago by one of the greatest Christian philosophers, St. Thomas of Aquino, who defined such tax systems as "a legally regulated form of theft."

The growth of corrupted bureaucracy in Poland was, up until 2007, one of the biggest job killers and country social, economic and ecologic development in the Europe.

4. The Civilisation of Lake Constance –
the biggest technological valley of Europe

The prerequisite condition of success of Bangalore-Hyderabad in reversing the brain drain and starting the Indian Economic Wonder was the building of the e-knowledge networks of the Indian diaspora with US specialist working in Silicon Valley. In Europe, the role of Silicon Valley is taken on by the Civilisation of Lake Constance (*Bodenseecivilization*), also known as Great Switzerland (Stasch 2008).

In the favour of the choosing the Civilization of Lake Constance as the source of innovation transfer speaks the dynamism and sense of differentiation of all technologies of 21st century developed and applied in this biggest of European technological valleys, which is documented by:

- the highest number of patent solutions in the world (over 1,200 per 1 million inhabitants) (see Table 2);
- the highest (4% of GDP) level of future investment in the R&D sector in the world;
- the highest in the world concentration of top universities;
- more than 3 million small and medium-sized enterprises developing, implementing and applying technologies of the 21st century;
- second highest concentration in Europe in terms of banks operating in the so-called magic triangle, Zurich, Frankfurt-Stuttgart-Munich-Liechtenstein-Monaco-Luxembourg;
- the greatest software companies of European Community: SAP and Software AG;
- site of the group logistics headquarters for Daimler-Chrysler, Bosch, Siemens, Audi, Porsche, BMW, BASF, Bayer AG, Novartis, Hoffmann la Roche, IBM Europe, Hewlett-Packard Europe, Boehringer AG, SAP, MAN, Mannesmann;
- top position in the world within the sector of private building associations.

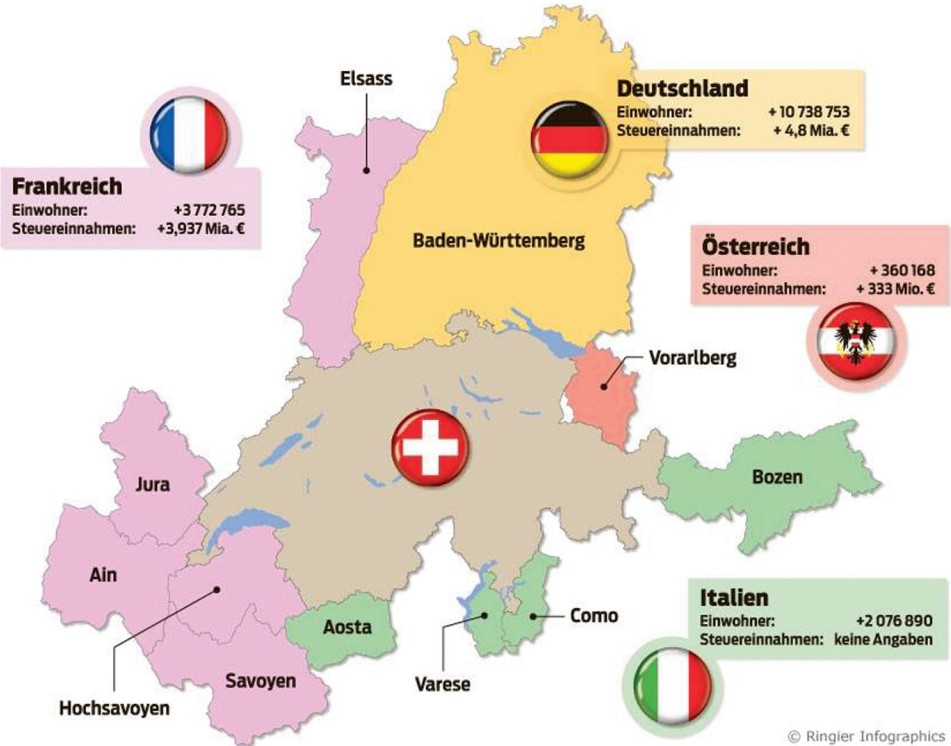


Figure 1. European Regions of Great Switzerland (Baden-Württemberg, Switzerland, Elsass-Lotharingen, Piedmont and Lombardy) together with Bavaria making a major contribution to the creation of a new technological-cultural phenomenon – the Civilisation of Lake Constance

Table 2. Patents granted (most recent) by regions of Civilization Lake Constance (Great Switzerland), East Germany and Poland

Region	State (province, Land)	Amount of patents per 1 million citizens
Great Switzerland	Baden Württemberg	1,380
	Bayern	1,040
	Switzerland	980
East Germany	Meklemburg Vorpomern	90
	Brandenburg	120
	Sachsen Anhalt	270130
	Sachsen	580
Germany	Germany	
Poland	Poland	30

Source: <http://presse.dpma.de/pressexservice/datenzahlenfakten/statistiken/patente/index.html> 2010.

5. Conclusions

In the paper I propose a new, Bangalore-Hyderabad-Silicon Valley strategy of reversing the brain drain and compensating the dramatical loss of human capital in Poland. The India's and China's economic miracles based on this strategy show that, in the longer (10–20 years) term the application of this strategy opens an alternative way for the brain gain in the countries with high level of bureaucracy, corruption, criminality and nepotism. In Europe, Poland is an example of such countries, classified according to the World Economic Forum's Global Economy as the country with very high level of bureaucratic persecution of inventors, entrepreneurs and all honest hard-working citizens. We emphasize that strong increasing of post-Soviet, pseudo-socialist bureaucracy, bribery, criminality and nepotism in years 1994–2005 in Poland was the main reason for **the hugest European “brain drain” of 4 millions most dynamical and best educated Polish citizens**. In this time the increasing, bureaucratic persecution of honest citizen, especially the private entrepreneurs, inventors and investors, stopped the “Polish Economic Wonder,” the effect of reforms of Wilczek-Rakowski and Balcerowicz-Bielecki. In other words, for the time from 1994 to 2007 Poland left the most effective way of economic and social development connected with reducing the taxes and social bureaucracy chosen in 19th and 20th century by: Great Switzerland, Sweden, Ireland, Great Britain, the Netherlands, Finland, Denmark and more than 20 others countries.

Today, if the country wants to retain its new generation, it needs to become a reality a lot of what Polish leading economists and politicians have always said.

It means that, instead of populist, pseudo-socialist slogans masking the system of persecution of inventors, entrepreneurs, Poland needs to improve the economic and personal freedom by:

- stronger rule of law,
- better legislation,
- making it easier to set up a business,

These reforms are a sine qua non condition of reversing Polish human capital flight, i.e. emigration of “highly skilled human capital” (well educated, trained and talented individuals) to Germany and other developed nations.

It is emphasized that the general reasons responsible for emigration of the best-educated citizens from Poland and other countries are always:

- civil war,
- lack of economic and personal freedom,
- a corrupted political class,
- an inefficient judicial system,
- very low levels of transparency and accountability within public institutions,
- an expensive and inefficient bureaucracy and high taxes.

All these factors stimulate the emigration of highly qualified human capital and discourage emigration of the low human capital (poor, passive and bad educated citizens).

The consequences of bureaucratic persecution of honest citizens shows pessimistic example of the interregional brain drain in Germany. In this country, since 1990 more than 2.5 million mostly university-educated and young “Ossis” as the Eastern Germans are called, have moved from the bureaucratic, post-Soviet eastern provinces (Länder) to Southwest Germany leaving empty hundreds of technological parks, universities and an the aging population behind.

In the last section of my paper I propose the reversing of brain drain by the e-transfer of know-how from the regions of Civilization of lake Constance, the most advanced European technological valley on the fronts of

- new technology and quality of life,
- ecology,
- science, and
- knowledge economy.

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Part Three

Contemporary Management Concepts

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The use of Teamcenter PLM software in managing student projects^{*}

Abstract: The paper presents the use of PLM software to assist the project management and project engineering student. In the first section we describe the theoretical basis for the operation of PLM software, then we discuss the system Teamcenter by Siemens PLM, and the process of its implementation on a dedicated server. The other presented issues are methods of installation and selection of modules.. Practical application of project management software Teamcenter was presented on the basis of the engineer project for students of the 7th semester. Students, after completing the project proceeded to engineer exam and gained the title of engineer. Another practical application of Teamcenter software has been presented in the project test vehicle suspension, moving the road. All the computer models, analysis results and the documents were archived in a database, allowing monitoring and verification of the work progress.

Key words: CAX, Education, PLM, Project, Teamcenter

JEL code: C900

1. Introduction

The main aim of product development nowadays is to shorten the designing time and its management, which in effect will lead to achieving maximum productivity. These objectives are reached by using the concept of concurrent engineering. It means a parallel execution of all activities related to the successive

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stages of product development. Full control over the activities taking place during the formation of a new product can be achieved through a strategy known as Product Life-Cycle Management (PLM), and what it means is managing a whole range of data, states and concepts related to the designing, production and final product. This is a strategy, philosophy and the most advanced approach to the issue of control of all phases of satisfying customer needs. PLM is the process of managing the entire product life-cycle from a concept through design, maintenance, until the end of life (Crankovic, Asklund and Person Dahlqvist 2003, Duda 2006: 39–47, Grzesik 2010, Teresko 2004: 32).

Attempt was made to use PLM software to manage the work of students in the engineer project. Since 2011, a form of obtaining the degree of engineer at the Silesian University of Technology is to create an engineering project. A group of twelve students was formed, which is assigned a general topic of the project. Then, the individual topics are emitted for each student. Execution of all topics and gathering them together creates a complete, unified and coherent subject. At the last stage, the students participate in the engineering exam, answering questions from the course of study, obtaining the title of engineer.

The process of developing a new product, the rise of the initial concepts, preliminary research and design prototypes, as well as the adoption of an idea to implementation, are the stages that make up the entire product life-cycle. According to Crankovic, Asklund and Person Dahlqvist (2003) in this cycle, there are several phases, and each of them is characterised not only by the input and the final result, but also through actions, required support, the roles performed by the persons involved and the technologies used. Regardless of the type of a product, this cycle can be divided into six phases (Figure 1):

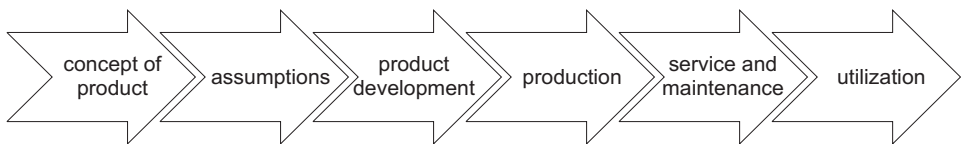


Figure 1. Stages of product life-cycle (Crankovic, Asklund and Person Dahlqvist 2003)

1. The concept of product – the product life-cycle begins with the creation of the original concept of the product. It takes into account the assessment of market and technology together with the identification of key requirements for the product.
2. Assumptions – at this stage the emphasis is put on further identification and analysis of requirements associated with the product.
3. Product development – this stage includes design and implementation activities. The result is the implementation of all measures needed for production.
4. Production – the most demanding and costly phase of product development.

5. Service and maintenance – a phase in which the product reaches the customer, and is used by him. To ensure proper operation, the product may sometimes require additional maintenance.
6. Utilization – it is the final stage of product life, the weight of which depends on the type of product, its complexity and materials used for its production (Crankovic, Asklund and Person Dahlqvist 2003).

In summary, many products are characterized by a long life cycle, but the final user has to deal with only a small part of it. To be aware of the whole product life-cycle, all the above-mentioned phases should be understood, activities and resources associated with them, and above all the need for process management present at each stage of new product development (Crankovic, Asklund and Person Dahlqvist 2003).

Another important issue are organizational requirements for information management. In order to discuss the organizational aspects of product data management, it is worth paying attention to the so-called process of its development, whichever is closer to all activities related to the formation of engineering data and the need for information surveillance. This process, as well as the entire product life-cycle can be divided into several distinct phases (Figure 2) (Crankovic, Asklund and Person Dahlqvist 2003, Duda 2006: 39–47, Grzesik 2010, Teresko 2004: 32).

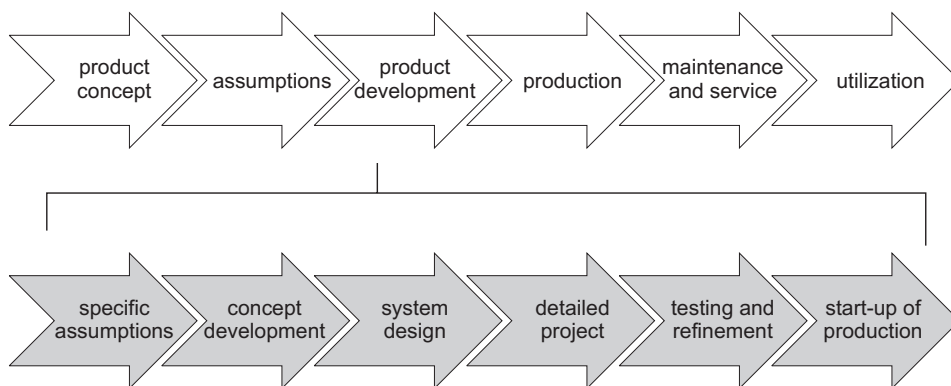


Figure 2. Stages of product development

It starts with the collection and analysis of detailed requirements, which take place at the stage of detailed assumptions (detailed requirements) and conceptual development (concept development). Then, there is a stage of examining the needs of the market here and defining the general requirements leading to a product concept. The next step is a design at the system level (system level design), which is determined by the product architecture including the identification of subsystems, components and their interrelationships. The architecture

of a new product is being developed at the stage of detailed design. The stage of testing and refinement involves the construction of prototypes used for testing the product and the production department. The start-up phase of production (production rump up) begins with a small start and grows to a number of full production series included in the plan (Crenkovic, Asklund and Person Dahlvist 2003).

What is necessary during the formation of a new product is the appropriate management of documents appearing in various formats (e.g. drawings, specifications, and generally CAx data that describe the product itself and its components). This management should prevail over both the distribution and development of information and the very structure of the product (Crankovic, Asklund and Person Dahlvist 2003, Duda 2006: 39–47, Grzesik 2010, Teresko 2004: 32). In the process of admission to the implementation of a new product there is a need to manage vast amounts of information and data. This information is not always consistent and usually do not appear in final form. It should control the flow of documents and their updates, and distribute data to all stakeholders (Crankovic, Asklund and Person Dahlvist 2003). By using PLM strategy, the product is controlled in every aspect and at every stage of its development. In modern industry, software platform for document management and product structure is more and more frequently used.

The concept of product life-cycle refers not only to management associated with all phases that occur in the formation of a new product, but also to identify the type of application engineering support related to data flow, control and planning. The basic idea of the product life-cycle management is to centralize and collect all the information, methods and tools and their integration into one common database accessible via a common interface. This means a collection of resources and tools that can be gained to allow you to control all phases of product life-cycle.

Table 1. The functionality of the PLM system (Crankovic, Asklund and Person Dahlvist 2003, http://www.plm.automation.siemens.com/en_us/products/teamcenter)

Users functions (used directly by the PLM system)	Utility functions (associated with the PLM system, forming an interface between different environments)
Management of data collection (data vault)	Communication and notification
Workflow management (workflow)	Data transformation
Product structure management (bill of material)	Data visualization service
Management of the classification (classification)	System administration
Project management	Application integration

The functionality of PLM systems can be viewed in terms of features directly addressing the user and the functions associated with the operation of the PLM system. Table 1 presents the basic functions of the PLM system.

Managing data collection takes the following form. The data set is a central location for storing information. The adjective “central” should not be understood in a physical sense, because in practice the data are stored in different, geographically dispersed places. Besides, the notion of a set of data refers to any form of information. It stores not only the documents in electronic form, but also paper documentation. Hence the data set is a somewhat abstract term, because only in special cases (e.g. small businesses) we can speak of a single location of data collection. In English, particularly in the generally accepted terminology of the PLM, the concept of the data set appears as: data vault, information warehouse, information vault, electronic vault, data repository or electronic library. The importance of all the listed English equivalents for the Polish definition of the set of data is the same.

In the case of today’s PLM systems, data sets are created based on a database environment, because there are information processed in electronic form. Even if some information (e.g. notes on a sheet of paper) is created outside the computer, then it is immediately processed into an electronic form and used for different types of databases due to their convergence. And that is distinguished by the user base (available only for one user), design (many users, and information on a single project), the product (many users have access to information describing the product with all its elements). Information collected in the data set are twofold:

1. Files created by various computer programs such as CAD, CNC program, text files, tables, spreadsheets and others.
2. Metadata, i.e. information about objects stored in the database, which allow easier access and manipulation (Connolly and Belg 2004). In case of metadata it is possible to collect and read information such as who created a specific file, who and when changed it, and even why (if such information was previously provided).

Data stored in a database are a subject to editing when working on the file by one user. To edit any file of the database must be operated on check out or “out” of this document. After editing, the user must perform a check-in, or a “load” of data to the file is visible in the database in the new version. This method of data handling to prevent simultaneous changes are made by different users and ensures data integrity. The user reads only those files in the database that are end edited (at a particular stage).

Collection of information stored in the database must also be provided with adequate access control, data security and integrity, which consists of management of the way the data flow. In the area of PLM it is called a document management or information management. This tool controls the data flow between the data set and users. PLM system users have a well-defined rights of access,

controlled by document management tool. In this way, every one who has access to the PLM system is subject to authorization. Giving the appropriate access rights is a very complex issue in the case of PLM, since the system usually has to do with a lot of people involved in the projects. Therefore, various security levels have to be defined and users assigned to appropriate groups with the same rights of access. Additionally, it is also possible, and close monitoring to determine which of users have access to data and when he/she has used them.

Workflow management is another crucial issue. This is a key element in the entire product life-cycle management. Properly designed and managed workflow can provide proper information to the appropriate user in the appointed time (Crankovic, Asklund and Person Dahlgvist 2003). Workflow consists of tasks that are assigned to engaged users. Depending on the role that a person performs in the project, the user may be required to make changes in the document, or only for its approval so that the process could proceed further. This provides not only automatization of the process, but also guarantees the implementation of tasks by the specified person. Each user carries out only what belongs to his/her competence and must have knowledge of the entire project, in which he/she is involved. The result are very large financial benefits, and what is more, it shortens the design and construction phases.

A tool for workflow management is now an integral part of the PLM system. The designated user initiates a particular process, and the rest goes automatically. The functionality of movement depends entirely on how it is designed. PLM systems provide tools for modeling workflow processes in a graphical form. Due to very frequent use, the issue of workflow is discussed in a separate section.

Product structure management. The structure of products included in the hardware group is called the Bill of Material (BOM). Creating BOM is usually available at the level of CAD but to a very limited extent. Management structure within the PLM product typically includes the following activities:

- identification of product configuration,
- managing the formation and selection of product variants,
- associating the data defining the product of its structure,
- the creation of different views of the product range,
- providing two-way transfer of product structure between PLM systems and applications, MRP or ERP.

BOM management is used at various stages of product life-cycle and supports any modifications made to already-designed products. The structure has to be properly set up to specify the impact of one element on another, e.g. what needs to be taken into account in the design of the reflector, if applied to other LED lighting (Figure 3). These and other problems are solved by using an application supporting the management structure of the product.

Management of the classification. Classification process management helps to control the standard components of the product. Under the concept of stan-

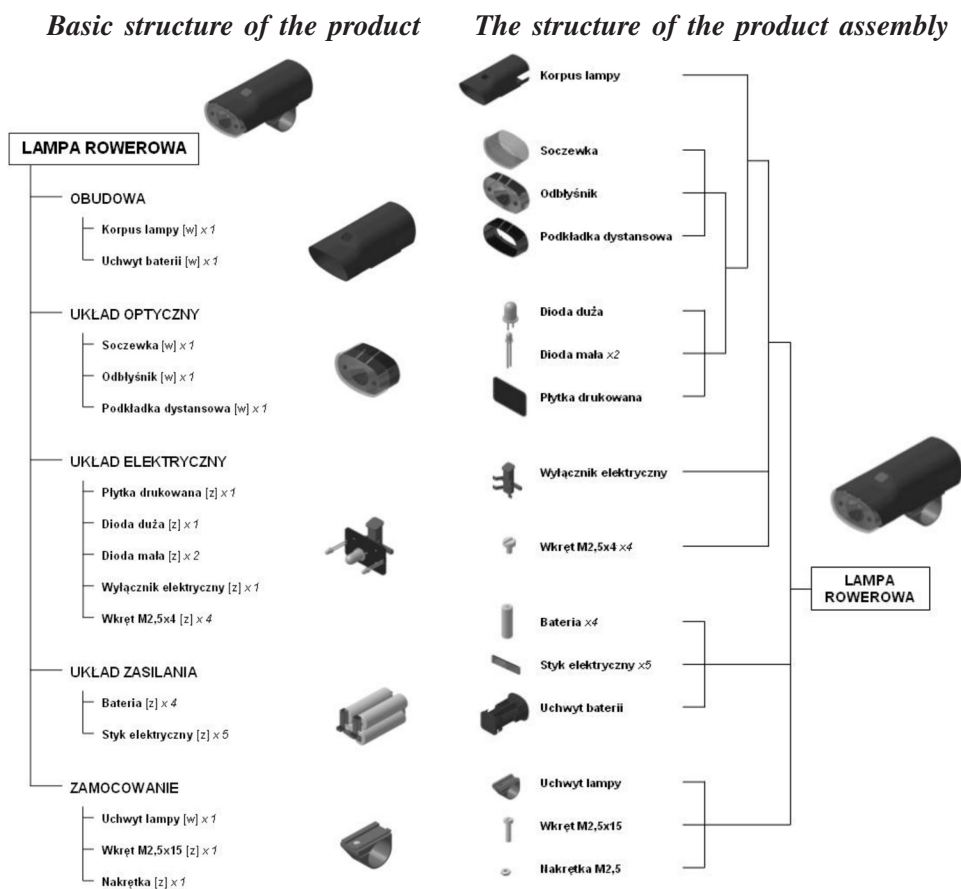


Figure 3. Two different product structures on the example of bicycle lamp

dard components we understand those elements that are used repeatedly in one or more products. These include standardized parts, taken mostly from the built-in libraries, as well as the standard elements defined by the user. With the granting of the relevant attributes of such elements it is possible to easily search through the database. Management is most commonly associated classification, normed parts with simple machines, but this tool also supports management of complex parts which form a template for a variety of products designed under one company. Often defined templates such as know-how owned by company (own “recipe” for constructing a specific product application).

Project management. It involves the application of knowledge, skills, tools and techniques to a variety of activities to meet the requirements of the project. Within the PLM system, this feature supports the use of project planning approach, Work Breakdown Structure (WBS), linking tasks with adequate resources and tracking the project. The main objective is to determine the rela-

tionship between design data and product data so that it is known what data will apply to the project and, therefore, what resources will be used (Crankovic, Asklund and Person Dahlqvist 2003, Duda 2006: 39–47, Grzesik 2010, Teresko 2004: 32).

Project management in the context of PLM systems usually includes the following:

- planning the scope of work,
- organizing the resources needed to implement the project,
- directing all activities to achieve the intended purpose,
- control of work due to limiting factors such as time, money;
- motivating project participants.

At the beginning of each project, the manager divides the problems into lower order, in which responsible managers divide them into individual tasks. In this way, sentences are divided hierarchically and form a structure called Breakdown Work Structure. With the ability to use BWS technique the adequate resources to different tasks can be easily allocated.

Communication and messaging. Members of the PLM system must be able to communicate with one another and should receive information related to the scope of their activities. There is a variety of communication solutions. Most PLM system mailboxes (e-mails), receive messages sent automatically by the system or sent by another user. Most PLM systems can also configure the system so that notification is sent to the specified e-mail. This feature is especially helpful for users involved in the project to a lesser extent, thus they are less likely to log into the system. Notification function is essential for the proper workflow. In turn, users engaged in the process of workflow are informed about the actions that should be done for the process to be continued.

Transforming data. One of the basic properties of the PLM system is the ability to manage files of various formats in one place (in one application). Very often there is a need to transform the file format. Such elements have been modeled in various CAD systems, but for the execution of the submission must have the same format. For this purpose, special dictionaries, which in some cases perform data transformation even without your knowledge, are applied. Despite the very powerful tools there are still limited opportunities for translation of formats, especially in the case of CAD files. The introduction of the STEP standard for storing CAD data does not resolve the problem of information exchange.

There is however a problem for today's PLM systems to associate files with specific applications and open them from within these systems. The system administrator has the ability to associate specific file extensions if they are not included in the default settings. This gives the opportunity to integrate the system with virtually every program installed on the server.

Service data visualization. It is closely linked with the transformation of data, because it depends on the degree of integration of system software used.

The function of data visualization can be compared to the graphical browser. PLM system should handle so many file extensions to enable viewing documents and their level without the need to run specific applications. Apart from graphic files and CAD models, users should be able to view text files, spreadsheets, presentations, etc. The service data visualization greatly speeds up the work and facilitates communication between employees.

System administration. These are all activities related to implementation of the PLM system, the setting up and maintenance during its use. The administrator must have extensive knowledge of operating systems, databases, systems management, discipline, EDM/PLM and Co., which administers the system. PLM system, however, should be equipped with appropriate tools to assist its management from the technical aspect. Administration of the PLM system is very complicated and involves many steps, such as:

- installation of software,
- configuration of database and network,
- defining users, groups and roles,
- empowerment,
- authentication of users,
- modeling workflows,
- setting up new projects,
- monitoring the performance of the system,
- data security and backup,
- update of the software.

More advanced systems are characterized by a powerful PLM module to administer the system supporting many activities. Operations such as creating backups are performed using the easy-to-use interfaces. It does not change the fact that the system administrator must be a highly qualified, because it rests in his/her hands to manage entire enterprise knowledge base. Very often many companies hired to administer the system are external IT companies.

Application integration. This function is closely related to the service data visualization and transformation, and by the way these issues has been discussed. It should be added, however, that PLM systems are integrated by default, usually with one of the selected CAD system (usually the one that is offered by the same manufacturer). Other systems require the installation of additional integrators.

2. Teamcenter – the implementation

Teamcenter 2007 is a collection of software modules available under one common interface which includes:

- enterprise knowledge management,
- collaboration community,
- lifecycle visualization,
- reporting and analytics,
- system engineering and requirements management,
- portfolio, program and project management;
- engineering process management,
- bill of material management,
- compliance management,
- supplier relationship management,
- mechatronics process management,
- simulation process management,
- manufacturing process management,
- maintenance, repair and overhaul. (http://www.plm.automation.siemens.com/en_us/products/teamcenter)

Teamcenter in earlier versions were offered separate products, including solutions for selected industries with a limited range of activities. The main products up to the 2005 version are:

- Teamcenter Community – a tool to exchange data and information through the Internet;
- Teamcenter Engineering – tools for product data management (CAx);
- Teamcenter Manufacturing – tool for optimizing the data associated with the production;
- Teamcenter Visualization – a tool for viewing CAD files, regardless of their size (Grzesik 2010).

Teamcenter 2007 is a platform that contains all solutions to support and control the entire product life cycle (PLC). This system uses a single database, which provides efficient communication between different applications. The 2007 release is characterized by a higher degree of integration between modules.

Depending on the scope of the undertaking, it can be freely configured by selection of Teamcenter system modules. The applications are available to the user in one package and he/she chooses a solution that would help them if he/she needs to manage resources in an organization.

Teamcenter 2007 is a system that, like other PLM systems, has a structure based on previously prepared database. For the purpose of working in Teamcenter 2007 the Oracle database version 10g is installed. After installing the database and preparing the operating system (user accounts, environment variables, the package files), the user must install the Corporate Server system. Corporate Server is the core Teamcenter 2007 software installation, which is its configuration regardless of the architecture. The choice of architecture is done right after installing the Corporate Server.

After selecting the architecture the user proceeds to install its associated resources, then the system becomes ready for operation. Final stages of implementation are already in the system itself, i.e. the creation of organizational structure and management of data structures appropriate for the user's organization.

Teamcenter is implemented in the Laboratory for Automation, Mechatronics, Integrated Manufacturing Systems and Production Management Methods on a dedicated server. There the installations of the database, servers and resources, as well as a Rich Client were conducted, which for testing purposes is on the same workstation as the installation of the system.

A complete software installation consists of:

- Oracle 10g – relational database management system (RDBMS);
- installation of Teamcenter Corporate Server 2007;
- embedded Visualization – visualization module;
- Rich Client, Thin Client – installing clients;
- installation of CAD: NX, Catia;
- installation integrators: NX Manager Integrator for Catia.

Installation requires the preparation of two user accounts, system administration and enabling the proper operation of a database management system (RDBMS):

- Teamcenter operating system account (dba) – account setup and administration of all system resources of Teamcenter 2007;
- the operating system account database (infodba) – Installation and Administration Account relational database.

Installing the database, creating user accounts, installing Teamcenter resources and preparation are carried out according to the system architecture documentation. Software is not prepared for a non-English version of Windows, so during installation we should take additional steps, beyond those set out in the documentation. Here are the basic steps of installation with the specification of the necessary corrections:

- modify the HOSTS file – the appearance of additional lines of text: ip_address hostname hostname.ugs.com;
- create new user accounts: dba (Oracle installation) and infodba (installation of Teamcenter 2007),
- preparation of a database (Oracle 10g):
 - the database server installation,
 - to create the Oracle Listener process,
 - to create a database (tcdev).
- Corporate Server installation along with resources:
 - of Teamcenter File Services,
 - Teamcenter Foundation,
 - the FMS Server Cache,

- UG NX Integration with,
- about Flex Licensing Server,
- the Online Help.
- Four-architecture installation,
- Installing Embedded Visualization and NX Manager for Rich Client:
 - the installation of NX Server license,
 - CAx software to install NX,
 - NX for installation template.

3. Practical example

3.1. Organizational structure for engineering project

The work activities were carried out within the engineer project and MA thesis for the purpose of supervision. The structure fits the user who specifies a group, and the roles performed by the users within specific groups. In Teamcenter 2007 the main element is the organizational structure of the group comprising subgroups and users.

To create an organizational structure in Teamcenter 2007 we must proceed according to a predetermined pattern (Figure 4). At the beginning, it is necessary to define user roles, and to identify which groups are present in the structure. The next step is to include the persons using the system. Each created user is attributed to the specific groups. The user can function in several groups where he performs different roles. Users have to define default roles and groups and during a particular session a user represents a specific group.

To oversee the engineering project a separate organizational structure has to be created. The largest group consists of users of student groups. Among them are: students studying the specializations at the Institute of Engineering Processes Automation and Integrated Manufacturing Systems. The engineer projects (see References) were divided into tasks. Within each group the group leader was selected. The task group leader was to coordinate activities and implementation tasks. He separated the activities between students and then verified the directionality of activities and reported to the scientific supervisor. The problem is solved within the group Team. Only when it is not possible to solve the problem, the supervisor receives a report and solves it (Figure 5). Such a hierarchical approach motivates students to solve problems within the research group.

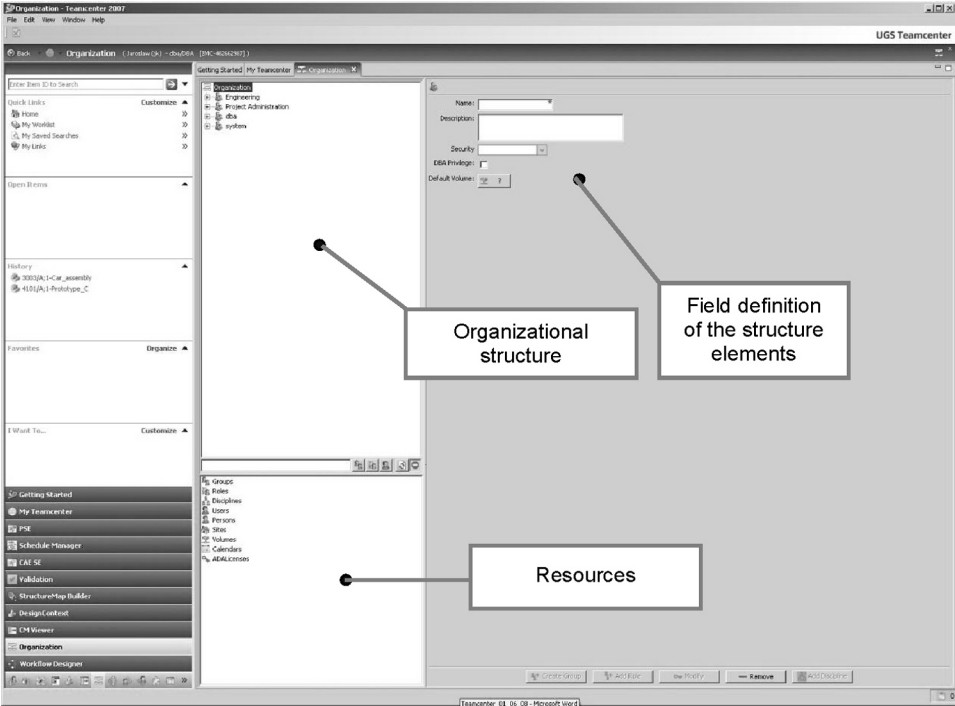


Figure 4. Elements of Organization application

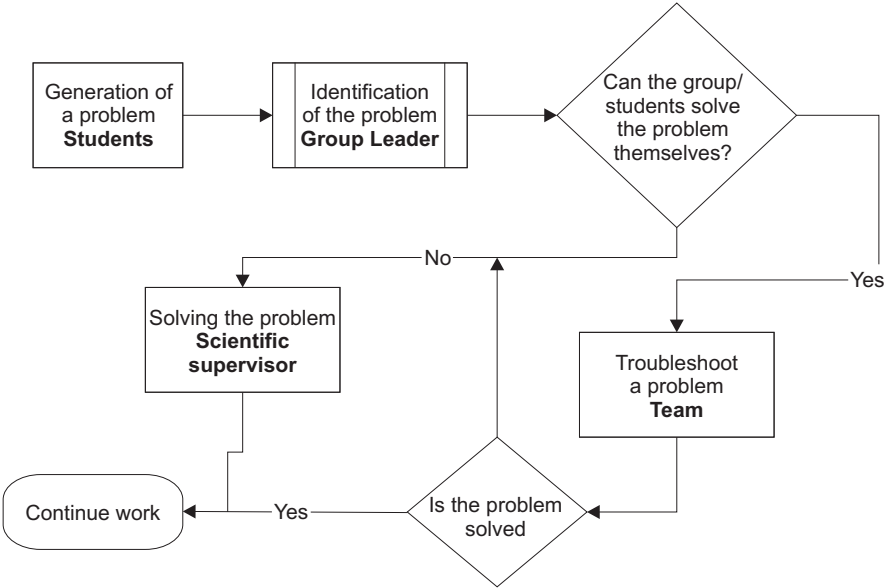


Figure 5. Flow of information – troubleshooting a problem

Another important procedure is verifying the tests. It must be performed according to the number and difficulty degree of the study, which can consist of:

- selection of components of the composite material,
- production of samples,
- determination of the scope of research,
- carrying out the tests,
- development of results,
- development of proposals.

The number of variables carrying the bug is difficult to identify, so the initial data verification is necessary to be performed (Figure 6). Resistance strain gauges applied method for longer testing generating the error associated with the wrong sticking, poor soldering, wrong connection, wrong calibration of the measurement system, misinterpretation of results. Detailed and accurate analysis of test results can help to avoid wrong conclusion from research.

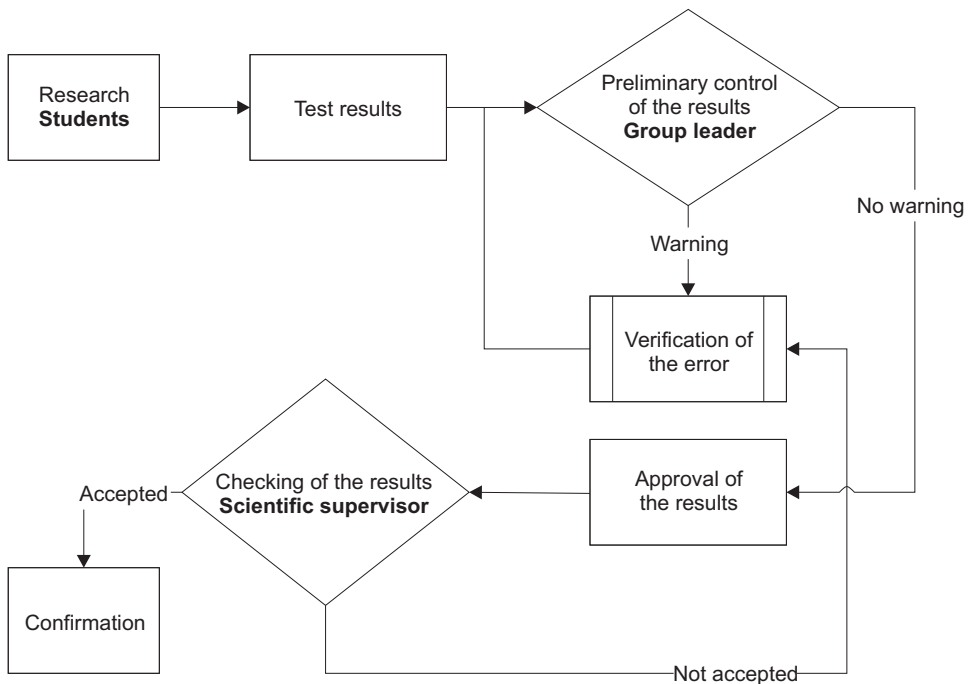


Figure 6. Diagram of information flow – verification of the test results

The primary function of scientific supervisor is to check the progress of ongoing work and tasks of the team. Due to the number of students, the teams decided it was necessary to appoint leaders who interact with the scientific supervisor who is called when they are unable to solve the problem as a group. Of course, if the student had to deal with an individual problem, the individual

consultations were allowed. The concept of hierarchical problem solving has fulfilled its function leading to a positively finalised engineering projects.

The most important function was performed by the supervisor. Supervisor has been leading the weekly engineering seminars, during which the next course of studies and their scope (Current Issues problems) was discussed. The main element of the seminar was the presentation of research results and their discussion. This allowed for the elimination of possible emerging doubts.

The group and the relationship prevailing between them is shown in the diagram (Figure 7).

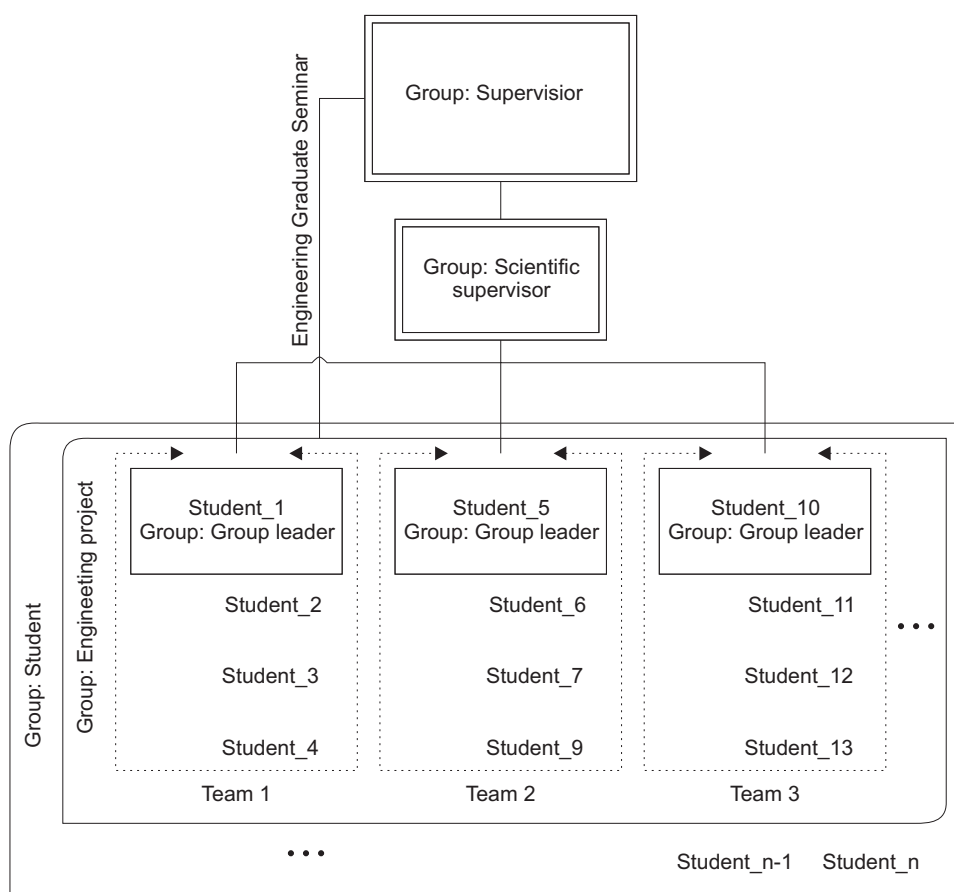


Figure 7. The hierarchy of groups

3.2. Research project concerning a car suspension

A research project was carried out with the use of Teamcenter to the analysis of the dynamic method of driving the wheels of a motor vehicle. According to the design goals, it should provide greater stability during cornering motion of a car. Therefore, to examine the advisability of the use of the modified system, computer simulations were carried out with the intention of comparing different traffic situations during the circular motion of the car and modernized the traditional powertrain.

At the beginning, the analysis of curvilinear motion mechanics had been performed, and then research models of computer simulations were prepared and conducted. The analysis made it possible to know precisely the theoretical description of circular motion and created the possibilities of simplification in modeling research. All information were managed, from the basic principles enshrined in the text and image files (scanned notes), 3D models created by research prototypes, to the documents containing test results (simulations, data sheets, graphs, pictures). For organising the data the management software was installed, the required organizational structure was set and within a specific data model, data structure was prepared in the system. Completion of all preparatory activities enabled the proper data management with access to all resources and facilitating their research project.

Creating of organizational structure in Teamcenter 2007 proceeded according to a predetermined schedule. At the beginning, it was necessary to define user roles, and to identify which groups are present in the structure. The next step was the inclusion of all persons using the system. Each created user was attributed to the specific groups. A user can occur in several groups where he performs different roles. Users have to define default roles and groups and during a particular session a user represents a specific group.

Table 2. Participants in the research project

Person		Andrzej	Jan	Jarosław			Michał		
User		(ab)	(jm)	(jk)			(mk)		
Role		Expert	Customer	Eng. Proj.	Proj. Adm.	DBA	Eng. Proj.	Proj. Adm.	DBA
Group	Eng.	+	+	+			+		
	Proj. Adm.			+			+		
	DBA			+			+		

Two groups set the aim of the project management: Engineering and Project Administration. In addition, the group uses DBAs, which were created automatically when installing the software. The group DBAs carry out all activities related to system administration, configuration, organizational structure, broadcasting rights, or installing new applications. The Engineering group includes all those involved in the project. Jan belongs to the group Customer, Andrzej – Expert, and Jarosław and Michał belong to the Engineer Project. This group was formed to carry out all maintenance activities and reporting for meetings and approval of subsequent phases of the project. Only Jarosław and Michał are responsible for supervision, and its administration in the lead role of Project Administrator in the group called the Project Administration.

When preparing a data structure and the data management processes primarily their own folders were used, which were placed, like other data elements, in the root folder of the user. This folder is called Home where the pre-defined folders are available in the system (NX Templates, Requirements Management Templates, MS Office Templates and others). In the Home folder, folders needed for project management are additionally created (Figure 8).

Workflow structures are used to direct and control activities of the specific tasks. It derives from the notion according to which the implementation of the

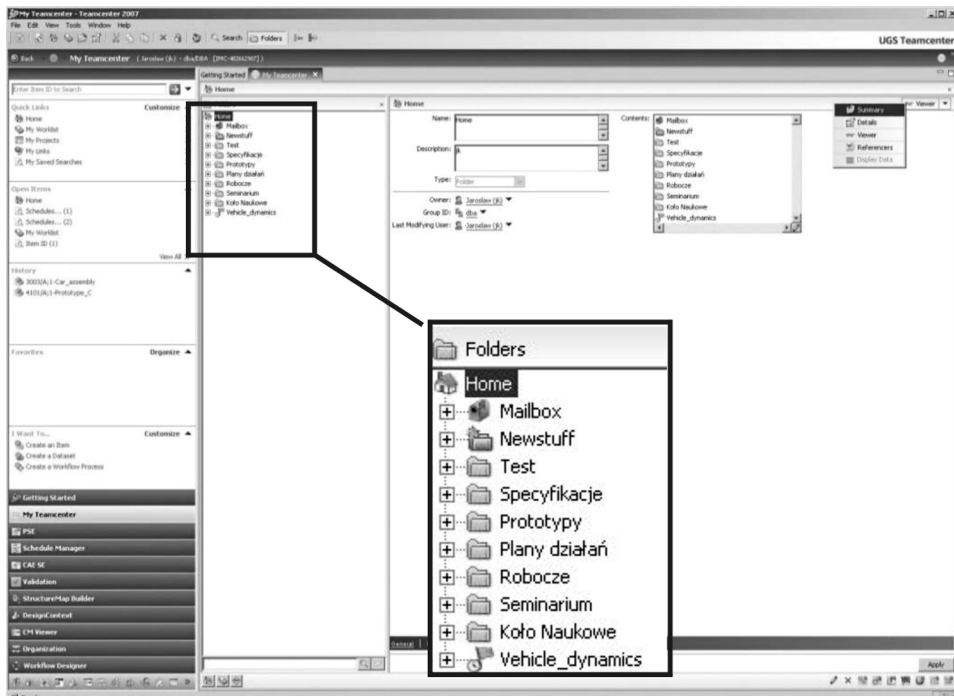


Figure 8. Data structure

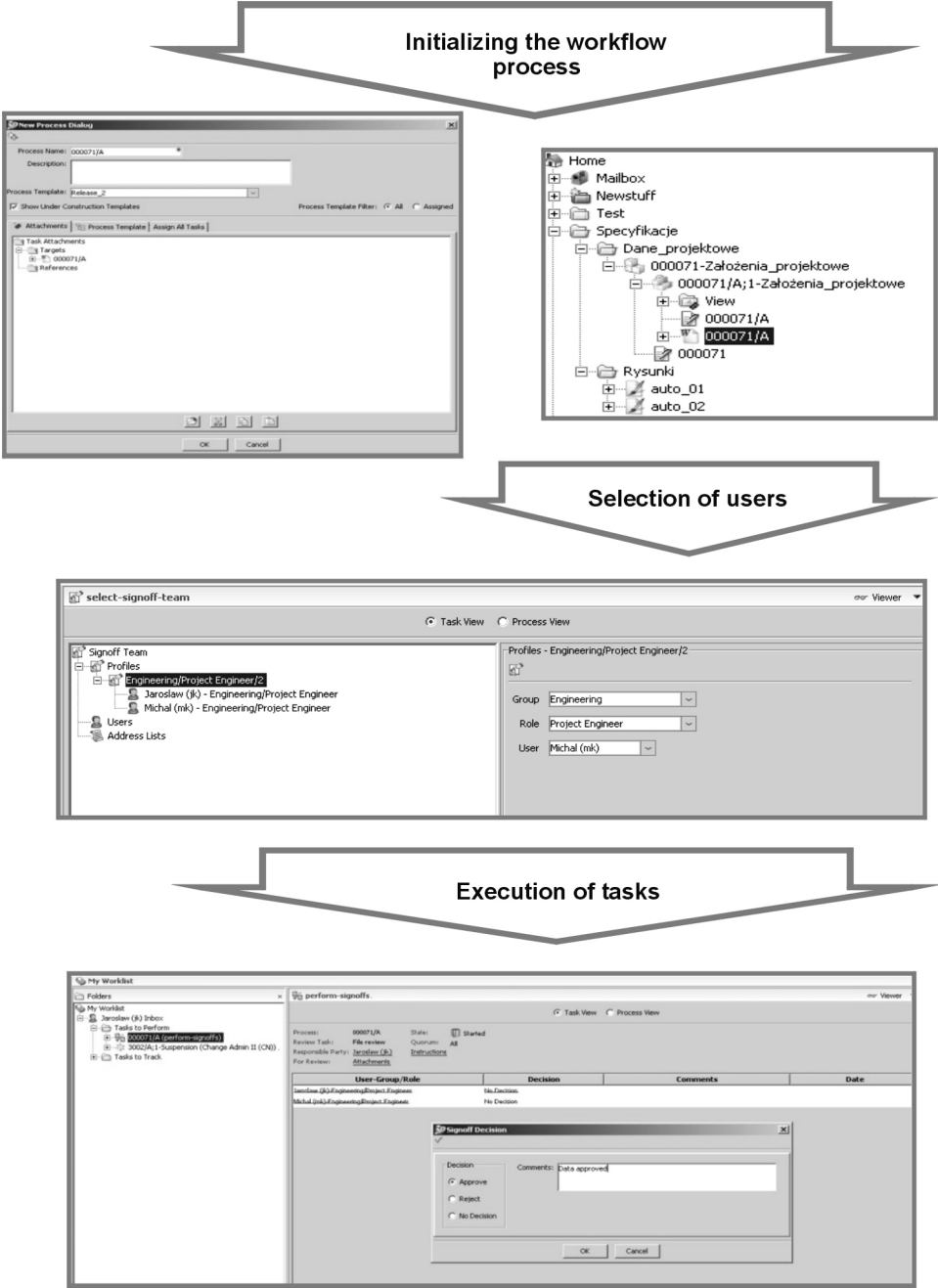


Figure 9. Workflow

work in the organization goes through a number of processes whose completion can meet these goals. The Teamcenter 2007 workflows (workflow) are built in the Workflow Designer application, and their viewing is possible due to the Workflow Viewer application. Typical diagrams of the workflow are:

- automation of business processes,
- the flow of information between the involved users,
- a set of predefined tasks with automatic management tasks and notification of users,
- a process that contains any number of tasks performed in series or parallel.

The construction of workflow structures. The construction of workflow structures takes place in the Workflow Designer application (Figure 9), in which the templates are used (Templates) or blank template is chosen (Empty Template) to build its own structure of the workflow. Basic elements of the application window for the construction of workflows are:

- Process Templates – the templates prepared for the construction of specific types of processes;
- Process diagram – a graphical representation of the process containing elementary functions;
- The Tree – displaying here all the elements of a process or task.

Execution of the tasks according to the scheme contained in the structure of the workflow in Teamcenter 2007 is as follows:

1. Initiation of the process workflow.
2. Selection of responsible users.
3. The execution of tasks within a particular process (for review and approval of data).

All of the above steps can be automatized. The process can be automatically initiated in relation to the data that appear, for example, in a specified folder in the structure of user data. Allocation of the people involved can also be carried out automatically according to a certain pattern. Only the last stage, the implementation of relevant tasks, must be performed by specific individuals. When working with data in the implemented project, only two process templates are used which are already finished: Quick Release and Review Process.

In the realized research project there were many 3D models and MS Word documents, which the system should check and accept. For an overview of these objects was carried out as part of the Review Process, all other data (videos, photos, presentations) were immediately taken with granting the status of Approved (Quick Release process). Then, the review of the suspension component in the prototype E was presented. For a review of selected component crossover, which occurs in the system under the same name. The following table shows the windows of the basic steps of activities related implementation of the specific process. Always in the performance of tasks you can control the

process and check the stage of its implementation. The Teamcenter Engineering 2005 notice on the tasks appears in the Inbox folder (Inbox) in the current version of the program, such information is always visible in My Worklist (Figure 10).

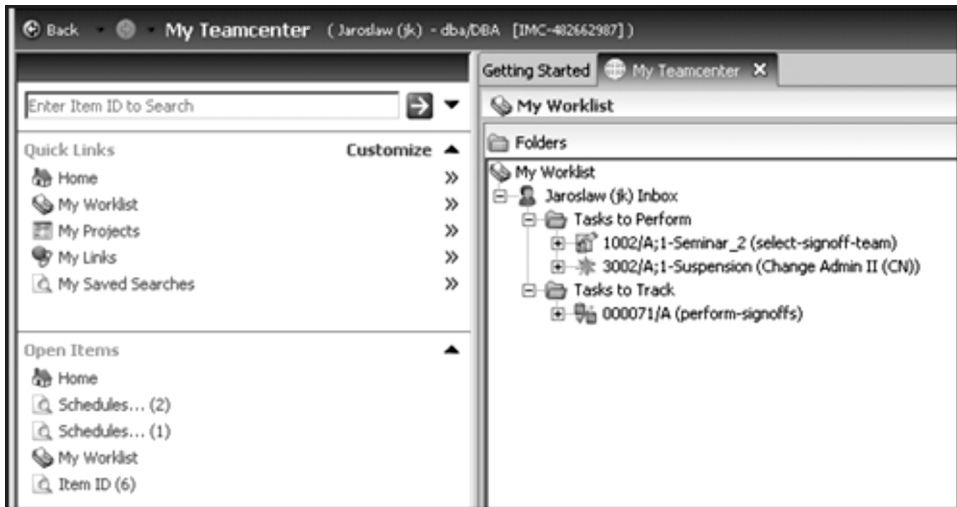


Figure 10. Worklist

4. Summary

This paper describes the theoretical and practical advantages of PLM systems. PLM systems, due to their complexity, are used only in large enterprises, during the process of development of technologically advanced products or products in large quantities. For small businesses a better solution is a simple version of controlling management and workflow systems.

Teamcenter system by Siemens has many options allowing you to build any structure of the organization. Its modular design makes it possible to adapt it to the needs of the enterprise, and with cross-platform it is possible to install server operating systems functioning in the company. Teamcenter 2007 system has been implemented on the Linux platform, assuming the work in a heterogeneous network environment. Implementation steps include installing the operating system, database server installation, Teamcenter suite of individual components, client programs and basic configuration.

Practical application of project management software Teamcenter, was presented on the basis of the engineer project, for students of the 7th semester.

Students, after completing the project proceeded to engineer exam and gained the title of engineer. The main task of PLM software was the management of the research (collection of measurements, computer models, etc.), document management and exchange of information between project performers and supervisors. Examining in this way how to integrate issues of engineering projects, each student participated in an experiment. It was found that the use of PLM software performs its basic functions, while the work of students was mobilized because regular and systematic reports are sent from the ongoing operations.

Another practical application of Teamcenter software has been presented in the project concerning testing of vehicle suspension, moving the road. All the computer models, analysis results and the documents were archived in a database, allowing monitoring and verification of work progress. At the same time it guaranteed preservation of previous research results, which enabled the comparison of subsequent test results.

The use of PLM-class software enables the execution of student projects: future designers, engineers, manufacturers, become familiar with management systems, and documentation of the project. In a further stage of work the above will not be new issues and they will easily adapt to the new situation in the enterprise.

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Selected legal issues of internet sale of goods

Abstract: This paper is preoccupied with the use of internet as a tool of market expansion. This type of sale seems very specific, since there is no direct contact between the client and the product at the time of contract conclusion. This is a reason for some special legal regulation of internet sales, which is the subject of this article. The authors apply, as a research method, the analysis of jurisprudence and doctrinal writings referring to the topic.

Key words: consumer protection, distant sale contracts

JEL code: K 12

1. Introductory remarks

In the contemporary information society the internet is a tool without which it would be difficult to imagine effective market expansion. One of the ways to expand is to sell goods and services through internet, which is often referred to as e-commerce (Barta and Markiewicz 1998: 90). Within the last two decades internet sale has become a widespread means of acquiring various products and services, which has entailed an incredibly dynamic development of e-shopping and consumer-to-consumer auction sites. The increasing popularity of online shopping is a consequence of a number of features which gained consumer recognition, such as for instance: the possibility to purchase goods and services without the need to leave house, possibility of quick and straightforward comparison of prices of the same products by different sellers, which means the choice

of the best bargain, wider range of goods and services, or finally the opportunity to acquire goods which are inaccessible in the place of residence of a given person. In consequence, the number of persons purchasing goods and services online is growing – those people can be referred to as e-consumers.

However, it should be emphasized that internet sale is essentially different from traditional sale transactions. One could say that its major distinctive feature is the lack of direct contact between the client and the purchased product at the time of conclusion of the sale contract. Displaying goods on the internet allows to expose their advantages and hide defects to a fuller extent than it is the case with traditional sales. As a result a consumer might be more likely to buy goods online which he or she would not buy offline – where the consumer has the possibility to evaluate the product directly before the actual conclusion of contract. This problem concerns as well other cases of distant sale. Thus, it seems justified on the part of the legislator to introduce specific legal regulations pertaining to this type of sale, aimed at fuller consumer protection than it is the case in traditional sale transactions. E-commerce, as an instance of distant sale also undergoes such specific regulation.

The goal of the present paper is to discuss the most important selected legal issues concerning internet sale of goods. The object of investigation are mainly these provisions on distant sale (thus pertaining as well to e-commerce) which serve the purpose of enhancing consumer protection. Their analysis allows the present authors to put forward a thesis that the currently binding rules, which endow e-consumers with a wide range of rights absent in traditional sale transactions, provide for a sufficient degree of protection of e-commerce clients.

Another question is the level of e-consumers' awareness of their rights and consistency in enforcement of these rights (including possible actions before the court). Nonetheless, the legislator has provided for certain effective tools which are capable of counterbalancing the basic drawback of internet sales, namely the lack of possibility to physically examine the goods before contract conclusion.

The article makes a contribution to the discussion on contracts under Polish law. It concentrates on theoretical issues, but ones of considerable practical significance.

This paper is a result of academic considerations on one of the classical institution of civil law, to outline that interesting matter. As a voice in the doctrinal dispute it can also be useful for law students.

2. Electronic conclusion of contracts

The object of our investigation shall be the Act of 2 March 2000 on the protection of certain consumer rights and liability for damage inflicted by a danger-

ous product (Journal of Laws No. 22, item 271 as amended), which, along with the Act of 18 July 2002 on the provision of electronic services (Journal of Laws No. 144, item 1204 as amended), makes a part of a wider legislative project covering the introduction of legal regulation concerning the widely conceived e-commerce. This subject has been for a number of years a subject of special interest to the Member States of the European Union, and Poland as a Member of the EU is obliged to adjust the standards of protection to the rules contained in the Community legislation. One of such legislative pieces is the Directive 97/7/EC of the European Parliament and the Council of 20 May 1997 on the protection of consumers in respect of distance contracts (OJ L 144/1997). In the understanding of the Directive the concept of distant contract covers all contracts pertaining to goods or services concluded between a consumer and a supplier within a system of sale or distant service provision, organized by the supplier who, for the purposes of the contract, makes use of only one or a couple of means of distant communication until and including the moment of contract conclusion. Within the scope of the Directive, the notion of 'consumer' relates to every natural person who acts within the transactions covered by the Directive for purposes unrelated to his or her trade, business or profession. The term 'supplier' refers to each natural or juridical person who, within the transactions covered by the Directive, performs his or her trade, business or profession. 'Means of distant communication' in turn are all means which can be availed of without the simultaneous presence of the supplier and consumer for the purposes of contract conclusion, and the operator of the distant communication means is every natural or juridical person, whether public or private, whose trade, business or profession consists in making accessible one or more distant communication means to the suppliers.

The indicated Acts – on the provision of electronic services and on the protection of certain consumer rights – are complementary in character. Sale of goods on the internet is covered by the notion of electronic service provision, both in bilaterally professional relationships and where consumers are involved. To each and every contract concluded via internet norms of the Act on the provision of electronic services are to be applied, whereas provisions of the Act on the protection of certain consumer rights apply to contracts to which a consumer is a party (Litwiński 2004: 237).

The internet is used for broadly understood marketing activities. This phenomenon has also been spotted by the Community legislator, who uses in this context an expression concerning transmission or other dissemination by interested parties of the so-called *commercial communications*, or basically commercial information. Within the scope of the Act on electronic service provision, commercial communication means every information destined directly or indirectly to promote goods, services or image of a business or professional whose right to perform the profession depends on the fulfillment of criteria set

out in separate statutes, to the exclusion of information enabling contact via means of electronic communication with a particular person and information on goods and services which does not serve the commercial purpose desired by the entity which orders its dissemination, in particular without remuneration or other profits from producers, sellers and service providers. As a result, the notion of commercial communication stretches over a very wide range of information, including: direct and indirect advertisement; public and non-public advertisement; direct marketing, which pertains to messages destined to individual addressees (for instance mailing, telemarketing); sales promotion, consisting in granting a free material benefit to the addressee (premium sale, promotion lottery, distribution of samples and gifts, as well as competitions; sponsoring understood as each form of participation of the sponsor in the costs of a given undertaking of another entity, on the condition that the financing participation is undertaken for promotional purposes of the sponsor; *public relations* activities, the goal of which is to promote the business image with the use of means of electronic communication, and proposals of contract conclusion, such as an offer, invitation to tender, invitation to treat, etc. (Gołaczyński et al., 2009).

Commercial communication should include the specification of entity which ordered the transmission, and its electronic addresses. It is forbidden not to provide any specification of such an entity. Precise separation and marking of commercial information translates to the obligation of such external marking of the commercial communication contained in an email, that the receiver should have no doubts that the communication serves promotional purposes. It seems inadmissible to use such markings which could confuse the addressee as to the content of the received message.

Commercial information placed on websites should be visually separate in an apparent way from other information accessible on the website.

As enacted by the legislator, information enabling electronic contact with a given person, his or her email, website address, domain names and information whose purpose is not to achieve a commercial effect, e.g. comparative product and services tests, evaluation, etc., ordered by the service provider, but performed entirely independently, do not make commercial communications. It is also assumed that a hypertext link to a webpage containing particular commercial information, unless its placement has a commercial purpose, shall not be considered commercial communication (Frań 2002).

From the point of view of the present subject matter it should be indicated that the Act defines measures of electronic communication as technical solutions, including teleinformatic equipment and software compatible with the equipment, enabling individual distant communication by means of data transmission between teleinformatic systems, in particular electronic mail. The prerequisite of classifying a service as provided electronically is its individual or

der by the receiver. The element of individual order on the part of the receiver should be interpreted in the following way: the receiver may demand the provision of service (for example consisting in on-line browsing of a database) from the place and in the time chosen individually by the receiver. This means that the service is provided at the receiver's request, as for instance the use of websites or *video-on-demand* services. In the case of radio transmission, teletext or television, among other things there is no element of choice by the client of the time of online provision of the service. Among such services one cannot as well enumerate voicemail, telefax and telex services, telephone marketing, or teletext services. SMS messages, however, make an electronically provided service.

Provision of electronic services has been defined as rendition of a service provided without the simultaneous presence of both parties (distant), by means of data transmission at an individual request of the client, sent and received with the aid of electronic processing equipment, including digital compression and data storage, which is entirely sent, received and transmitted within a telecommunication network.

Distant contract conclusion interpreted broadly involves contracts concluded via internet by using websites, availing of electronic mail and information systems *Electronic Data Interchange*, which allow to generate statements of intent by the computer without human involvement (Kocot 2000b: 29). Means of distant communication are: printed media, means of telephone communication, as well as radio and television communication (Jagielska 2000: 561).

A characteristic feature of contracts concluded distantly is the use of the electronic form of the statement of intent. The notion of electronic form of a statement of intent (referred to in art. 60, Civil Code) should be interpreted broadly as a set of data which can be created, processed and stored by means of modern technologies (Kryczka 2006: 98ff).

Respective information mentioned in art. 66¹ § 2, Civil Code should be provided to the other party in an unequivocal and understandable manner. This requirement has been formulated similarly to art. 9(2) of the Act on the protection of certain consumer rights, thus, as one might expect, it should be interpreted in the same way. As in the case where the information obligation set out in art. 66¹ § 2, Civil Code has not been complied with, the solution may be found on the grounds of compensatory liability or provisions on the vices of consent (Kryczka 2006: 96).

Pursuant to art. 6(1) of the Act, contracts concluded distantly are contracts concluded with a consumer without simultaneous presence of both parties, with the use of means of distant communication, in particular a printed or electronic addressed or non-addressed order form, serial letter in the printed or electronic form, press advertisement with a printed order form, electronic advertisement, catalogue, telephone, telefax, radio, television, intercom equipment, video

phone, videotext, electronic mail or other means of electronic communication in the understanding of the Act on provision of electronic services, if the other party (but the consumer) is a business whose activity is organized in the abovementioned manner. The catalogue of means of distant communication remains open. In pursuance with art. 6(4) of the Act, the use of means of distant communication in order to place a proposal of contract conclusion cannot take place at the cost of a consumer.

Provisions of the Act do not apply if the means of distant communication are used only for advertisement or informative purposes. The use of a means of distant character at the conclusion of contracts cannot be occasional or single. Within the understanding of art. 6 of the Act a contract concluded by means of telefax is not going to make a distant contract if it is an extraordinary and untypical practice for a given business (Łętowska 2000: 47; Radwański and Olejniczak 2009: 175).

The qualification of a contract as distant is thus decided by four elements. These are the parties to the contract – on the one hand there is a consumer, an addressee of the offer, person ‘consuming’ relevant goods or services, and on the other there is the offeror – a business which has professionally organized its activity in such a form. The third characteristic feature is the conclusion of contract without simultaneous presence of both parties (in the absence of the second party, without direct physical contact), and the fourth one is conclusion of the contract with the use of means of distant communication. However, this does not have to be the sole, exclusive or basic manner of business activity of the professional. The business’s intent to conduct at least a part of its commercial activity in such a way seems sufficient (Kocot 2000a: 47, Łętowska 2000: 47, Litwiński 2004: 242, Podrecki 2005: 715).

For a contract to be qualified as distant four elements seem to be substantial:

- a consumer – an addressee of the offer;
- the offeror – a business which has professionally organized its activity;
- the conclusion of contract without simultaneous presence of both parties;
- the conclusion of the contract with the use of means of distant communication.

Article 6(2) of the Act provides as well on the so-called *animus contrahendi*, which means that the proposal of contract conclusion may assume the shape of: an offer, invitation to tender or submitted offers, invitation to treat. The proposal should also contain unequivocal and clear information on the intent of contract conclusion by the proposing party.

It should be emphasized at the same time that the use of telephone, videophone, electronic mail, intercom or other means of electronic communication in order to put forward the proposal of contract conclusion may take place only with previous consent of the consumer, since the sole initiative of the professional may result in a surprise to the consumer and interfere with his or her

privacy. The violation of the prohibition makes an unlawful conduct of the business which should bear in mind that an intervention of the President of the Office of Competition and Consumer Protection, or municipal ombudsman for consumers, may follow (Kocot 2000b: 29, Podrecki 2005: 721).

In the period before the conclusion of contract, respective information may be delivered to the consumer in any form, with the aid of a means of distant communication, also by means of an internet site used for the purpose of concluding contracts with consumers. The opinion expressed in academic writings seems convincing that the information may also be transferred within a direct contact between the parties (*a minori ad maius* type of reasoning) (Jagielska 2000: 563).

The content of the concluded agreement is freely shaped by the parties. However, the legislator indicates in art. 8 that a contract for continuous or periodic provision can be concluded for a definite or indefinite period of time. A contract concluded for more than one year is deemed on the expiry of that period as a contract for indefinite time. Where the contract period has not been specified, each of the parties may terminate the contract without giving reasons on the expiry of a three month notice period (Radwański and Olejniczak 2010: 178). Moreover, in accordance with art. 11(2) of the Act a contract should specify the place and manner of exercising warranty rights, which do not produce excessive difficulties or costs on the part of the consumer. The period of contract performance can be determined freely by the parties. However, if the parties have not stipulated otherwise, in pursuance of art. 12(1) of the Act a business should perform the distant contract before the expiry of 30 days from the expression of the consumer's statement of intent to conclude the contract.

The Act on the protection of certain consumer rights provides as well for a specific easement for the professional who is unable to carry out the contracted provision because the object of contract is not accessible. Article 12(2) entitles the professional to rescind from contract, and thus weakens the obligation of performance in accordance with the contractual content. The professional should urgently, not later than 30 days from the conclusion of contract, inform the consumer about the exercise of the above right and return the whole price obtained from the consumer (Kołodziej 2005: 31, Podrecki 2005: 729). In the case of impossibility to perform the contract is thus not considered void *ex lege*. If the contractual relationship is to expire, it is necessary on the part of the professional to exercise due diligence and comply with the obligation to inform the consumer – in whatever form – that the contracted object is not accessible. Should the professional fail to comply with this obligation within the prescribed – 30-day – period, he or she is going to be liable for non-performance of the contracted obligation. In academic writings (Kołodziej 2005: 32ff) one can encounter an opinion that in art. 12 of the Act on the protection of certain consumer rights it should be precisely specified what the event might be which causes termination of contract. Also a legal ground should be introduced for

the consumer to claim (statutory) interests from the price (or remuneration) already paid for the period starting from the payment of price or remuneration (but most frequently from the date of contract conclusion). *De lege lata*, the inaccessibility of contractual provision on the part of the professional should in each case result in the expiry of obligation *ex lege* (by *per analogiam* application of art. 475, Civil Code).

An attempt of performance by provision of a surrogate rendition is provided for in art. 12(3) of the Act. Where the business cannot perform the obligation because of even a temporary impossibility to perform the rendition which was contracted by the consumer, the professional may, if such a clause was included in the contract, release him- or herself from the obligation by carrying out a surrogate rendition of equivalent quality and purpose, for the same price of remuneration, notifying the consumer at the same time in writing about the consumer's right not to accept this rendition and to rescind from the contract involving the return of the delivered goods at the cost of the professional. In such case the consumer has the right to rescind from the contract in the mode and on the conditions specified in art. 7. Return of the delivered thing takes place at the cost of the business.

The discussed provisions are minimal in character, since art. 17, in the wording introduced by the Act of 4 February 2011 Private International Law (Journal Laws No. 80, item 432), envisages that one cannot contractually exclude or restrict any of the consumer rights set out in arts. 1–16e of the Act. In scholarly writings a view has been expressed (Lijowska 2004: 137) that provisions of consumer statutes do not exclude the law of conflict autonomy of will of the parties in relation to contracts falling within the scope of consumer protection. It is the case because we do not have to do with a restriction of the freedom of contract as regards the choice of proper law sanction by contract invalidity, but only a conditional restriction of the scope of application of the chosen law.

It should be noted that not all contracts for the provision of services by means of electronic communication are encompassed by the regime of the Act on the protection of certain consumer rights. For various reasons, the legislator has decided in art. 16(1) that the distant contracts regulation shall not be applied to: contracts with the use of selling machines or other devices placed in commercial places (for instance placement of a parking meter or a machine selling until out of goods); pension contracts; contracts concluded with telecom operators with the use of public telephones; contracts pertaining to immovable property – to the exception of lease and auction sales. As a consequence, provisions of the discussed Act do not apply to popular internet auctions (Radwański and Olejniczak 2009: 175, Kocot 2000b: 29, Podrecki 2005: 726) – for instance to the sale of goods on Ebay or Allegro portals.

Moreover, as stipulated in art. 16(2), in certain types of transactions the professional is not obliged to provide 'pre-contractual' information to the consumer. The relevant provisions of arts. 7, 9 and art. 12(1) shall not be applied to: sales

of groceries provided periodically by the seller to the house or place of labour of the consumer, and provisions, in a strictly specified sense, of services within the field of accommodation, transport, entertainment, gastronomy; in the case of entertainment in the open air the business may also restrict the exclusion of the obligation to notify about the impossibility to perform, envisaged in art. 12(2), but only in circumstances indicated in the contract. This may for instance refer to purchase of stay in a guesthouse in the mountains or a ticket for a festival. It should be emphasized that the opinions of academics are rather critical of the discussed solution (Litwiński 2004: 247, Podrecki 2005: 727).

3. Consumer protection

3.1. At the stage preceding contract conclusion

The aim of consumer protection at this stage is to ensure privacy to the consumer, as there is a risk of infringement of his or her personal data and obtaining access to information connected with the contract, as regards the danger of restrictions in this field.

Transfer of non-ordered commercial communication without the consumer consent makes an infringement of the private sphere of life of an individual. Via electronic mail, many types of personal interests can be violated which make for the sphere of private life, such as good name, right to an image, surname, dignity or the right to anonymity. The received message is going to show which of the above interests has been breached. Each time, however, regardless of the content of the message, its transfer without consent can be regarded as disturbing the receiver of the delivered mail (Rączka 2004: 101ff, Jagielska 2000: 563).

In the case of websites, the consumer browses the contents of the internet and decides whether he or she should pay attention to the given site. Where the professional makes proposals of contract conclusion at internet websites the sphere of the consumer's privacy is not infringed as a rule (Wejman 2000: 41, Litwiński 2004: 253, Łętowska 2000: 44). The construction of prior consent, the so-called *opt-in* option is related to the fact which has been already indicated, namely that the use of the particular means of communication may not surprise the consumer and disturb his or her privacy.

One of the pillars of the discussed protective regime is access to information. The range of information, both prior and subsequent has been specified by the legislator in art. 9 of the discussed Act.

From the point of view of consumer rights art. 9(1) seems particularly significant. Pursuant to this provision, the consumer should obtain specific information with the aid of a distant communication means, at latest at the moment when he or she is confronted with the proposal of contract conclusion, hence the name 'prior information'. This information enables proper identification of the professional and concern the provisions of the prospective contract which might be concluded with the consumer. The information includes name and surname (commercial name), habitual residence (registered office) of the professional and the authority which entered the business into the register, as well as reference number of the business's registration. Moreover, the consumer should be informed about essential characteristics of the provision and its object, for instance from the point of view of a disabled or allergic client. The information should also include the price or remuneration, covering all their components, in particular the customs and taxation. The consumer must be informed about the mode of payment of the price or remuneration (cash or other types of payment – check, credit card, bank transfer) as well as the cost, period and manner of delivery. Another crucial information, which is still going to be discussed, is the info on the rescission right within the period of ten days and the indication of respective exceptions. Moreover, the information is to cover the costs deriving from the use of means of distant communication, if they accrue differently from the regular rate. 'Warming up' stands for the period in which the offer or information about the price is to remain binding. The client must also be informed about the minimal period for which the contract for continuous or periodic renditions is to be concluded, the place and mode of exercising warranty rights and the right to terminate the contract concluded for indefinite period on the three-month notice period.

The information should be formulated in a clear unambiguous manner, in a way understandable and legible. These requirements concern both the form and content of the message (Łętowska 2000: 48). The postulation of transparency is related to the clear and unequivocal formulation of information in the graphic sense – legible font, pattern accessibility, and in the intellectual sense, which means that the message needs to be conceivable. One could add that the Polish legislator provides more far reaching requirements for the professional in this respect than the Directive itself (Łętowska 2000: 53ff, Radwański and Olejniczak 2009: 177, Litwiński 2004: 24).

The so-called subsequent information covers the obligation on the part of the professional to confirm to the consumer in writing the important information, at the latest at the moment of performance of the obligation, in order to circumvent the risk of loss of the provided info. The sanction for non-compliance with this obligation is the prolongation of period prescribed for rescission from the contract. Such a requirement has not been included in the Directive. As envisaged in paragraph 4, the discussed obligation does not con-

cern single provisions which are themselves carried out with the use of distant communication means and which are billed by a natural or juridical person who makes accessible at least one means of distant communication as a part of his or her commercial activity. The means is accessible both to the consumer and professional (operator of the means of communication).

It is worth emphasizing that where the professional makes a proposal of concluding a distant contract and, without waiting for the consumer's reply he or she carries out the provision, the professional acts always at his or her own risk. Such is the rule expressed in art. 15 of the Act on the protection of certain consumer rights. One should share the view that, even if the consumer accepted the non-ordered goods in the previous transactions and paid the price, he or she shall not be obliged at each of the following transactions to accept the delivery, and the cost, as well as the risk of loss, damage or diminishment of the goods shall rest in whole on the professional. Moreover, in such circumstances one cannot invoke a commercial usage established between the parties (Jagielska 2000: 564).

3.2. After the conclusion of contract

The lawmaker's urge to ensure proper performance of contract on the part of the professional translates to the consumer's possibility to rescind from contract. Consumer protection comprises as well statutory rules pertaining to the period of performance of the obligation by the professional; regulation of payment of the price and exercise of warranty entitlements, as cancellation of payment by card.

An essential unilateral entitlement of the consumer is the right to rescind from the contract without giving reasons and payment of compensation (the so-called *cool-off period*, *tempus ad deliberandum*). As provided in art. 7(1), the consumer who concluded a distant contract may rescind from it by delivering a respective notice in writing within the period of ten days. It is worth emphasizing that the Directive itself envisages a seven day period (Radwański and Olejniczak 2009: 179).

In order to comply with the prescribed period, it is sufficient to send the notice before its expiry. One can only approve of the views voiced in academic writings (Łaszczyk and Szpara 2001: 54) that the statement concerning termination of contract should reach the professional before the expiry of the period on the expiry of which the right to rescind becomes distinguished. In consequence, the statement on rescission sent before the expiry of the prescribed period which has not reached the professional after its expiration cannot be considered made.

It is necessary to keep the written form of the statement *ad probationem* (for evidence purposes), but it is not indispensable to provide reasons for the rescission from contract. It should be stressed that an email or telephone conversation is not sufficient to comply with this formal requirement. The necessary components of such a statement are the specification of contract, its parties, whether the goods have been collected, and the very statement concerning rescission.

An extremely important principle has been included in paragraph 2 of the discussed provision, pursuant to which it is not admissible to make a reservation that a consumer may rescind from the contract only in exchange for particular compensation (Łętowska 2000: 34). However, one should bear in mind that the prohibition of correlating the right of rescission to any specified compensation envisaged in art. 7(2) remains binding only within the period envisaged in art. 7(1), as well as in art. 10. As a result, there are no restrictions when it comes to the reservation of compensation in case of rescission by the consumer after the expiry of that period.

The ten day period (preclusive in nature) in which the consumer may rescind from the contract on the ground of art. 10(1) of the Act starts on the date of delivery of the contracted goods (i.e. their reception by the receiver at the post office or from a carrier), and where the contract concerns provision of a service – from the date of contract conclusion. As has been already mentioned, in the case of non-compliance by the seller with the obligation to provide proper information, the period in which the consumer is entitled to rescind from the contract amounts to three months and starts on the date of delivery of the contracted goods, and where the contract is for the provision of service, on the date of its conclusion. However, if the consumer, once the period has already started, receives proper confirmation, the period becomes shortened to ten days from the date of delivery of the relevant information (Jagielska 2000: 562, Szczygielska 2003: 414, Łaszczyk and Szpara: 54).

Article 10(3) regulates in an exhaustive manner the instances when the right of rescission is due. However, it must be stressed that it is only a default rule, and the parties may allow for rescission also in situations not envisaged in the provision. Where the parties have not stipulated otherwise, the right to rescind from a distant contract is vested in the consumer: in the case of provision commenced with the consumer's permission before the expiry of period to rescind (the so-called principle *volenti non fit iniuria*); rescission is impossible in relation to audio and video records, as well as records on electronic data storage media after the removal by the consumer of their original package (the so-called cellophane clause) and as regards contracts concerning provisions for which the price depends exclusively on the fluctuation of prices on the financial market. Personalization of the provision and establishment of an untypical choice for a permanent client cause that there is no possibility to rescind from

provisions of the characteristics specified by the consumer in his or her order, or strictly connected with the person of the consumer. The next exclusion concerns provisions which because of their character cannot be returned or whose object is affected by quick decomposition (cheese, sausage in an e-grocery), as well as contracts for press delivery and gambling services (Litwiński 2004: 259, Radwański and Olejniczak 2010: 173, Łętowska 2000: 50).

The exercise of the rescission right leads to a situation in which the contract is considered as not concluded, thus the effects are retrospective. What has been rendered by the parties must be returned unchanged, unless the modification was necessary as a part of ordinary management. This notion has not been elaborated upon by the legislator, hence the need to evaluate the factual situation in a particular case. Ordinary management – according to civil law principles – means management connected with the regular use of goods, which does not lead to their damage (Łętowska 2000: 35). For instance, one can check if an appliance functions properly by inserting batteries. In the judgment of 3 September 2009 (C-489/07), the ECJ indicated that the use of laptop may consist in the installation of software.

The return should take place urgently, but not after the expiry of fourteen days. Should the consumer have made any prior payments (for instance if the price was paid by card or bank transfer) statutory interests are due from the date of early payment. It should be emphasized that one cannot exclude the discussed provision by force of the rules of the e-shop or contractual clauses.

Article 13(1) stipulates that in the case of rescission on the part of consumer the professional is obliged to confirm in writing the return of the provision. Where the rendition of the consumer is to be carried out with the aid of a credit or loan granted by the professional, or where the contract provided for the conclusion of a separate credit contract based on the agreement between the professional and creditor, the rescission from a distant contract shall be effective as well in relation to the credit or loan contract concluded by the consumer.

In order to protect the interests of the client to a fuller extent, art. 11(1) provides that the contract may not impose on the client the obligation to pay the price or remuneration before he or she receives the mutual provision, which prohibition is sanctioned by invalidity of a respective clause (art. 58 § 3, Civil Code).

From the practical point of view, an interesting question is the pursuit of an answer to the question who should cover the costs of delivery. Under Polish law the question of costs of the goods' return has not been unequivocally decided. Scholars generally take the stance that *a contrario* in relation to art. 12(4), sentence 2, of the Act on the protection of certain consumer rights one should conclude that the costs shall be incurred by the consumer. Article 12(3) envisages that the professional has the right to carry out a surrogate rendition,

corresponding to the original one in terms of quality, purpose and price or remuneration, on the sole condition that such possibility has been envisaged in the contract. Pursuant to art. 12(4) the consumer is entitled not to accept such provision and rescind from the contract in the mode provided for in art. 7. This provision stipulates that in such a case the return of the goods takes place at the cost of the professional. It follows that in every other instance of rescission and return of the contracted goods to the professional the costs should be covered by the consumer (szczygielska 2003: 98). The doctrine and judicature of the ECJ indicate that the costs ought to be covered by the seller, and the decisions of the Office of Competition and Consumer Protection, as well as the Directive, suggest that the costs are incurred by the client who terminated the contract.

The protection of consumer as an owner of a payment card (the so-called abusive use of a card) has been regulated in art. 14 of the Act, pursuant to which provision the consumer may demand cancellation, at the cost of the professional, of the payment made by card if the payment card was used improperly in the respective distant contract. This does not lift the obligation to remedy the loss suffered by the consumer on the part of the professional (Litwiński 2004: 266, Radwański and Olejniczak 2009: 179, Kocot 2000: 33, Podrecki 2005: 729).

Table 1. Areas of consumer protection

At the stage preceding the conclusion of contract	After the conclusion of contract
– ensuring privacy – obtaining access to information	– possibility to rescind from contract – the period of performance of the obligation by the professional – regulation of payment of the price – warranty entitlements – cancellation of payment by card

Source: authors, scientific description based on references.

4. Concluding remarks

The object of investigation in the present paper was the legislative protection of the weaker party to a distant contract, as an example a contract concluded via internet. Characteristic traits of such contracts are the place and form of conclusion. Consumer's limited possibility to learn about and examine the goods or services purchased online brings about the necessity to introduce special legal regulation, which put the consumer in a more advantaged position than in

the case of traditional sale. In authors, opinion there is sufficient protection given by Polish law.

Commercial communications are a part of services provided electronically. Most frequently, they make for broadly understood advertisement, as well as statements of intent comprising an offer of contract conclusion. The statute imposes on a professional the pre-contractual obligation to provide to the consumer wide, exact, legible and understandable information concerning the content of the prospective contract. Durability of the contractual relationship has become dependent on a written confirmation by the professional of the majority of information provided to the consumer at the latest on the moment of performance. The Act ensures as well to the consumer full freedom to rescind from the contract within the specified period. As can be seen, the legislator differentiates between the tools and principles of protection, depending on the stage of activities connected with the conclusion and performance of contract.

Apart from the indicated mechanisms envisaged in the Act on the protection of certain consumer rights, the postulation to protect entities concluding contracts with the use of the internet is additionally implemented in the provisions of the Act on provision of electronic services. The need to obtain consent for being posted commercial communications following from art. 10 of the discussed statute causes that only the 'ordered' information may be acknowledged as services provided electronically. In consequence, it would not be feasible to equate commercial information and a proposal of contract conclusion.

Apart from the remarks which formed the main body of the present paper, it should be indicated that an individual client may enhance his or her safety in a situation of online contract conclusion. This can be done by selecting well recognized e-shops, verifying the shops' credibility – by checking opinions on the sellers. Where the transaction is of bigger value, it is praiseworthy to choose the option of payment on delivery.

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Interactions with the environment as a factor of absorptive capacity

Abstract: Expectations of stakeholders and complexity of processes within an organization cause knowledge to be the only source of a competitive advantage. It is not enough for an organization to rely on its own resources. Permanent renewal, updating and modifying makes knowledge valuable for the organization. Many scholars have argued that interaction among firms enhances their capacity to absorb external knowledge. Interaction is considered as one of the most effective ways to obtain relevant knowledge from the external business environment. Therefore, from the perspective of business firms, interaction is a precondition for the possibility to absorb knowledge from internal as well as external sources.

Key words: absorptive capacity, cooperation with the outside, interactions with the environment, knowledge

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1. Introduction

Turbulent environment, stakeholders' expectations, the complexity of processes within an organization, are just some of the factors which force it to compete, including effective identification, assimilation, transformation, and exploitation of knowledge.

Knowledge helps managers take vital decisions. In addition, it builds up and strengthens the position of the organization on the market. It is the source of competitive advantage. Knowledge enhances using information, skills, the achievement of managerial efficiency, which is the basic element in the fight for effectiveness, development and survival. Knowledge enables an organization

to acquire the capacity to solve problems, efficiency and flexibility. It is a valuable source for an organization, provided that it is constantly revised, updated and modified, it is argued that “the lack of awareness of this issue, trying to treat an organization merely as a black hole sucking knowledge inside, can lead to relative isolation of a relational company, and as a consequence to its imminent ageing and fall” (Mikuła 2004: 32). Therefore, it is not sufficient for an organization to depend inclusively on its internal resources.

Literature specifies what knowledge must the organization absorb in the first place. Such knowledge must be difficult to imitate for competitors (Rokita 2009: 115), viscous (Bush 2005: 66–71), redundant (Krupski, Niemczyk and Stańczyk-Jugiet 2009: 183–184), informative (Levitt 1991: 201), created using a variety of procedures, methods, tools, different from the knowledge already acquired, derived from sources of a particular sector and beyond it. The ability to absorb knowledge which has all the forgoing characteristics, affects the ability to maintain advantage in the market, to follow the latest trends, the absorption of new technologies, as well as the speed to adapt to changes and learning organization. It is so important in building a sustainable competitive advantage, generating economic values and strategic decision-making. Problems cannot be limited to the possession of knowledge by an organization. The main problem in using this concept remains in the very different approaches used by academics. While the literature offers multiple methods to conceptualize and operationalize absorptive capacity (Zahra and George 2002), little attention has been paid to the question of whether, and how, educational institutions can enhance the development of absorptive capacity.

The aim of this article is to recognize the significance of the interaction with the outside using the example of educational institutions. The article is divided into three parts. Part one, covers the essence of the environment of organization. The next part demonstrates the concept of absorptive capacity of organization. The third part shows the importance of interaction with the environment in the absorption of knowledge by organization. The article is based on a review of literature on the subject.

2. The concept and essence of organization's environment

Environment is defined as a collection of elements that are outside and are not part of the organization, but have influence on it. Simultaneously, the same organization may also influence its outer elements.

Literature presents two levels of organization surroundings: direct environment and general environment. Each of them are discussed below. The direct

one is defined as the factors that are outside the organization and have an impact on its functioning and decision-making. This type of surroundings can interact with organization. It consists of suppliers, customers, competitors, banks and financial institutions, state institutions (including Inland Revenue, local administrative authorities), local labour market, trade unions, as well as external conditions of functioning of organization – technical progress in a given activity. The general environment, also named in the literature as intermediate or further, is defined as conditions in which the organization operates. These are cultural factors (cultural and historical tradition, a system of values, ethical standards) technological factors (infrastructure, knowledge, level of technology), political factors (political system, governing, involvement in public life by politics), legal factors (legal order, legal standards), economic factors (growth, monetary policy, economic model), social factors (structure of a population, educational level, system of education), natural factors (natural resources, climate, soil quality, hydrological system).

There is also a division of environment into the external and internal. The internal environment consists of owners, directors, employees and the physical environment of the organization. External environment includes anything that can influence an organization from the outside, they are the factors in which a company operates and they define its functioning. In addition, the external environment is divided into the “general” environment and “task.” The general environment consists of the following dimensions:

- the economic dimension – the condition of the economic system, economic growth, interest rates, inflation, unemployment;
- the technical dimension – methods that allow the conversion of resources into products and services;
- socio-cultural – tradition, habits, demographic characteristics, values;
- the legal and political dimension – the national regulations of economic activity;
- an international dimension – the extent to which the organization participates in economic activities in other countries.

The task environment are organizations and groups that affect the organization and therefore they might be competitors, customers, suppliers, regulators (units that can control the way the organization operates), groups of interest and alliances (several organizations which cooperate within the joint venture and other forms of partnership).

The review of literature points to the environment as a source of opportunities and risks for an organization. The degree of dependence of an organization from the outside is different and depends on the organization itself. An organization can change and shape the surroundings, and it also may affect operating of the organization and its effectiveness.

In this way, environment may limit the autonomy of organization. Hellrieger and Slocum (1982) show the following characteristics of the environment that affect the organization:

- complexity – depends on the number and diversity of customers and vendors (the degree of homogeneity);
- the volatility – based on the number and frequency of change. Here there is constant and changeable environment. In constant, the nature of products should not be altered in the long term, there are no changes and innovations in technique and technology, the number of vendors and customers is stable, new competitors do not appear, the legal, social, and economic policies are also solid. While the changeable environment is characterized by frequent changes, the type of product and services, there is technological innovation, customers and competitors often change their preferences and behaviour, followed by frequent changes in the policy of the state towards an organization.

The two dimensions, both complexity and homogeneity, define the degree of uncertainty, which is a factor that influences taking decisions in an organization. This uncertainty may be: minimum, moderate and high. The minimum degree of uncertainty concerns simple organizations. The moderate concerns dynamic but simple organizations. A high degree of a surrounding uncertainty concerns the dynamic and complex organizations.

In addition, the environment may influence the organization through the competitive force and inner interference. Disturbances in the surroundings are associated primarily with different kinds of crisis. In addition, the surroundings can be seen by organizations in terms of the five forces of competition, which include:

1. Threat from a new organization entering the market – indicates the ease of new competitors being introduced into the market.
2. Competition – concerns the competitive relations between organizations, which are predominant in this sector.
3. Risk of substitute products-replacement of products with alternative ones.
4. Buyers' force – impact of product and services buyers on suppliers.
5. Suppliers force – influence of vendors on potential buyers.

In addition, the analysis of the surroundings also takes into account the role of multi-stakeholder. Some groups are included here, namely those that are engaged and take action, owing to formal contracts or agreements, impact on the organization and therefore expected benefits from an organization. In this approach, the stakeholders are employees, shareholders, investors, loan institutions, customers, suppliers and partners (in case of profit organization) and state authorities, public organizations, the public (in the case of non-profit organizations, public organizations). Other approach includes anyone who is concerned with the organization as a stakeholder: they have an impact on the organization or it affects them. These are: government agencies, competition, associations, NGOs,

trade unions (in case of commercial organizations) and commercial, social organizations and public opinion (in case of public organizations).

A variety of interactions and dependencies take place between the environment and the organization. Each of the groups stands out a deal, which makes it meet various needs. The answer to the turbulence is “progress in art, the continuous improvement of the capacity to act due to practical application of our growing knowledge” (Drucker 1999: 149), and thus arises the need for the activity of the members of the organization and its external partners (Dyer and Harbin 1998: 660–679). However, in view of the decline in the importance of material resources, the need to build and strengthen their competitive advantage by using knowledge is indicated by researchers of the science of management as the primary factor. The growing importance of knowledge makes creating it independently risky. It lengthens the time of creating a basic knowledge, and also limits the flexibility of an organization.

3. Absorptive capacity

Capacity is defined as the potential of action, “regardless of its praxeologic characteristics, and so the level of efficiency” (Czakoń 2007: 240). This ability is displayed when an organization recognizes its capabilities and resources. An organization that has the ability is one that can reach, with accumulated skills and resources, specific objectives in such a way that it distinguishes it from the competition. It knows how to do something and is able to do it.

Cohen and Levinthal in *Absorptive Capacity: A New Perspective on Learning and Innovation* (1990) initiated an interest in research on the absorptive capacity of organization. This work in the years 1990–2011 was cited in 31 publications. Since 1990 many scientific publications have been written. They examine the absorptive capacity theoretically, however there is no empirical research.

In recent years, some attempts appeared to redefine this concept towards competitive advantage (Grant 1996: 375–387), organizational learning (Dyer and Harbir 1998: 660–679), the response to the presence of knowledge in organizations (Lane, Koka and Pathak 2006), the development of innovation in an organization (De Jong and Freel 2010) building a competitive advantage, innovation, knowledge management. The question of absorptive capacity of the organization shall also be taken by Polish theorists of management (Czakoń 2007: 240).

The absorptive capacity of organization was originally defined as the ability to identify, assimilate (Cohen and Levinthal 1990: 128–152), recognize the value of external knowledge (Van Den Bosh, Volberda and De Boer 1999: 551–568), and the ability to use knowledge, which is to be found in the sur-

rounding environment (Cohen and Levinthal 1990: 128–152) for commercial and economic purposes. It is also the ability to develop a set of organizational procedures and processes that can help the organization acquire, learn, process and exploit knowledge in order to obtain dynamic organizational capacity and problem solving ability (Kim 1998). In defining knowledge transfer, its importance, process of learning organizations, learning interactions, changes in the environment, the capacity of organization to absorb, were taken into account. It is one of the fundamental learning skills that enable us to identify the knowledge and information outside the organization, their assimilation, internalization and using for the purposes of the market. It depends on basic knowledge (Jimenez-Barrionuevo, Garcia-Morales and Molina 2010).

The absorptive capacity of organization is also defined as learning, discovery, scientific and technological achievements made outside organizations. It allows an organization to acquire knowledge and to use it effectively in order to enhance the capacity to innovate, adapt to changes in its surroundings and be competitive (Daghfous 2004: 21–27).

Several studies published so far agree about one: absorptive capacity is not uniform, but it is multidimensional (Todorova and Dorisin 2007: 774–786). However, there is no agreement as to the number of constituents and their order (Table 1). The most frequently cited dimensions include: identification, assimilation and exploit new knowledge and a set of organizational procedures and processes by which an organization may acquire, learn, process and exploit knowledge in order to obtain a dynamic organizational capacity (Zahra and George 2002: 186).

Table 1. Main dimensions of absorptive capacity

Author	1st dimension	2nd dimension	3rd dimension	4th dimension
Cohen and Levinthal (1990)	recognize the value	assimilate	commercialize	–
Heeley (1997)	acquire	disseminate	–	–
Lane and Lubatkin (1998)	recognize the value	assimilate	commercialize	–
Lane, Salk and Lyles (2001)	understand	assimilate	apply	–
Zahra and George (2002), Jansen et al. (2005)	acquire	assimilate	transform	exploit
Todorova and Durisin (2007)	recognize	acquire	assimilate or transform	exploit
Lichtenthaler (2009)	exploratory learning, recognize and assimilate	transformative learning, maintain and reactivate	exploitative learning, transmute and apply	–

Source: own work.

It can be observed, therefore, that the researchers did not recognize absorptive capacity organization clearly. Components of these were also defined in different ways. Identification is described as the ability of organizations to locate, evaluate and acquire knowledge located outside the organization (Lane and Lubatkin 1998: 461–477). Assimilation, then was defined as the ability of an organization to absorb knowledge obtained outside the organization and its interpretation, its analysis, classification and understanding (Szulanski 1996). Transformation means facilitating the transfer and conversion of the “new” knowledge with “old” knowledge (Jansen and Van den Bosh 2005: 999–1015) and the ability of organizations to develop, expand and improve procedures that enable the connection of the existing knowledge and the absorbed one. Transformation refers to the disposal of the useless knowledge and the removal of unnecessary tension between new knowledge (which may give rise to innovative processes) and traditional knowledge (which is necessary for obtaining the current effects) (Rokita 2009: 115). It is necessary to change the organizational patterns here and the extension of existing knowledge of an organization by obtaining synergies with knowledge already possessed, which contributes to the creation of new ideas and projects. Its usage is defined as the application of new knowledge obtained from the outside, gaining economic benefits from earlier exploration, while using the competencies of employees. This is a basis for the creation or improvement of new products, systems, processes, competencies, organizational structures.

Identification of new knowledge by the organization in most general terms means establishing its sources and the “pursuit of its clarity,” recognizing the value of that knowledge using your own knowledge, which is indispensable for the functioning of the organization. At this stage it is important to acquire new competencies which constitute an incentive to establish cooperation between organizations (Welsch, Liao and Stoica 2001) and the coordination and coherence of action within the organization. These actions aim to adapt to changes and existing difficulties or those which are likely to arise in the surrounding environment. These items may be applied for the measurement. You can test the ability to determine the basic knowledge, knowledge gap, the sources of knowledge, the mechanism of learning of an organization and past experience with the identification of new knowledge.

The next concept is assimilation, which is inclusion of new knowledge. It is defined as the organization’s capacity to absorb the knowledge obtained outside the organization and to interpretation. This requires a knowledge base and involves a combination of new knowledge, which may decide about the future of an organization with an “old” knowledge which is necessary to obtain the current results.

Transformation of new knowledge is the ability of organizations to develop, expand and improve the procedures that facilitate the connection of the existing knowledge and absorbed knowledge.

Absorptive capacity can be relative: the firm's ability to learn from another firm should be determined jointly by the two organizations. Zahra and George suggest that absorptive capacity is a dynamic capability, they also distinguish two components of the absorptive capacity: the potential and executive one. The potential, according to the authors, ability to raise and assimilate potentially useful knowledge and the executive ability are transformation and exploitation, which is "the ability to obtain the expected values from knowledge as a result of transforming the potential opportunities into operationalized, affecting the competitive advantage achievement" (Rokita 2009: 173).

Potential absorptive capacity is defined as the ability to absorb and assimilate potentially useful knowledge (Rokita 2009: 185), which is caused by the external and internal factors and refers to the process of single-loop learning. Then the organization sees errors or gaps in knowledge (Argyris and Schön 1978: 9). This allows the understanding, adaptation and opening for knowledge found in the vicinity of the organization. Potential absorptive capacity goes smoothly when potential members have experience and expertise, and the acquisition of knowledge involves explicit knowledge and in the process of assimilation tacit knowledge.

Potential ability depends on the impact of the basic knowledge of the organization and experience in the learning of its members (Howard-Grenvill 2005: 618–636). Activation of the potential capacity is concerned with "the trigger", an event, which makes the organization react to emerging external or internal stimuli. This may be an event inside the organization or technological changes. These factors can trigger the desire to seek (Cyert and March 1963), stimulate learning (Winter 2000), intensify efforts related to the exploration of external knowledge.

The potential absorptive capacity of the organization makes it open to external sources of knowledge. In other words, the organization must know where and what are the sources of knowledge. This refers to procedures that enable you to analyse, process and understand the information obtained from external sources. Transforming it is the ability to modify and adapt external knowledge and connecting it with the existing internal knowledge sources. Acquisition of new knowledge is related to the ability to identify and acquire knowledge existing outside the organization, which is of crucial importance to the activities of the organization. The acquisition has three characteristics: strength, speed, and directionality. The strength and speed are associated with the organization's effort, which seeks to identify and gather knowledge. Thanks to these characteristics, an organization can specify its capability of acquiring. Directionality determines the paths from which an organization may acquire knowledge (Zahra and George 2002: 981–996).

In literature it is assumed that the potential ability influences the executive ability. Both the absorptive capacities of knowledge have different tasks, how-

ever, they occur at the same time, and reinforce each other. Zahra and George determine the relation of potential capabilities to executive ones as the efficiency factor. The efficiency factor says that organizations have different abilities to obtain the expected values from their knowledge.

Potential absorptive ability of knowledge may be developed by the organization through its experience (George 2005: 119–151), knowledge structures, a common language between the members of the organization (Ahuja and Katila 2001: 197–220), participation in alliances, based on knowledge (Kumar and Nti 1998: 356–367), search for new sources of knowledge (Van Wijk, Van den Bosch and Voberda 2001).

Realized absorptive capacity is defined as the ability and capacity to absorb external knowledge, mainly by imitation, which leads to the creation of new knowledge, including an organizational learning. Realized absorptive capacity is also the process of applying new knowledge (Sorensen and Lundh-Snis 2001: 83–97) to obtain the expected values as a result of transforming potential opportunities into useful ones, refreshing of knowledge and generating organizational procedures that affect obtaining and ensuring competitive advantage. Realized absorptive capacity is also the ability to use external knowledge in the organization (Arora and Gambardella 1994: 91–114), which facilitates the development of the organization by applying the knowledge acquired from the outside and inside. It reflects the effectiveness of the organization in the processing of the obtained knowledge. Using technological ways (Gold, Malhotra and Segars 2001: 185–214) the knowledge acquired in this way shall be available to all members of the organization. This will enable you to maintain a long-term competitive advantage (Jantunen 2005: 336–349).

The majority of researchers claim that the realized absorptive capacity is proceeded and driven by the potential ability. This process is carried out inside the organization and brings about transformation and adaptation of knowledge to the needs of organization. This knowledge is modified, completed and transformed into a product, a system or a process (Spender 1996: 45–62).

Transformation is the modification and adaptation of knowledge, connecting it with knowledge held by organization and knowledge “produced” inside it. The transformation process is about creating conditions and procedures that enable the connection of the “old” knowledge with the newly acquired knowledge and its acquisition. Transformation can be achieved by adding or deleting knowledge, or interpreting existing knowledge in a different way. Transformation can be achieved by adding or subtracting the knowledge by its new interpretation. Transformation changes the nature of knowledge (Koestler 1966: 35). Its two components are internalization and conversion. The elements of transformation are: internalization and conversion. Transformation can be measured by the number of new ideas or projects. Absorption of new knowledge is defined by Zahra and George as procedures and mechanisms that enable its un-

derstanding, analysis, interpretation and using in practice, information and knowledge derived from external sources. Krupski believes that “stable internal situation favours the further development of the so-called culture of knowledge” (Krupski, Niemczyk and Stańczyk-Hugiet 2009: 183–184). This is due to specialization of knowledge, achieving some economic benefits by organization. It also takes place when the organization acquired some knowledge unrelated to the current one. The essence of using new knowledge is to improve and expand the already existing technologies and models of competence.

The ability to accept new units of outside knowledge depends on the level of knowledge held by organization. However, this is not sufficient. Absorptive capacity is closely linked to management structures, systems of social relationships. Apart from the basic knowledge, there is a need to develop organizational units referred to as a combination of possibilities, integration of stakeholders in the processes of organizational learning, which will enable the organization to use the basic and the “new” knowledge (Kogut and Zander 1992: 383–397). Stakeholders are seen as “a source of various knowledge (Sitko-Lutek and Skrzypek 2009: 79).

4. Interactions with the surrounding world as a support of absorptive capacity

Interaction may occur among the people within an organization as well as between a group of people and the environment. Our discussion about interaction primarily concentrates on the interaction between a company and its external business environment, aimed at absorbing knowledge required for enhancing the learning organization's. Previous studies have emphasized the importance of interaction as a basic element in the stimulation of a firm's absorptive capacity.

Initially, the question of the impact of environment on the organization was ignored by researchers (Lenart 2011: 96–105). Thus, researchers believed that the organization does not have to interact with the outside world. With time, the organization was defined as a system strongly determined by their surroundings. However, an organization is defined as an element of a given system, so it interacts with other elements. Researchers indicate that interactions with the outside is known as the “outer cognitive economy” (Nooteboom 1992: 281–299), relationships with other members of the network of knowledge (Caloghirou, Kastelly and Tsakanikas 2004: 29–39) are one of the main factors that influence and stimulate the development of new products, organizational processes, the absorptive capacity of the organization, and in particular the ability to recognize the value of new knowledge and its reception.

Interactions with the environment include: active or passive participation in decision-making, modification of the behaviour of the organization and provision of knowledge. These interactions may include depending on the surroundings: they facilitate access to new resources or halt the inflow of resources. The access to intangible assets is very important as creating knowledge focuses risk, increases the amount of time for creating knowledge base and also limits the flexibility of the company. Knowledge acquired from the environment is important for the absorptive capacity of organization. Organization does not exist for itself. Exchange of knowledge requires cooperation with the direct and indirect environment, and external knowledge itself is important for the learning of the organization and its innovation (Waalkens 2006). There is also a view that external knowledge and in particular its characteristics may take possession and distort absorption. In this way the organization in interaction with the outside may take the following patterns:

- proactive explorer – an organization is looking for new contacts in the surroundings or experiments with the current ones;
- proactive exploitation – an organization avoids the costs of searching and maximization of the value of the existing contracts;
- reactive explorer – an organization is looking for new contacts with the outside or experiments with the existing ones;
- reactive exploitation – an organization avoids the costs of exploration and maximization of the value which have been drawn from the existing contracts, e.g. with stakeholders.

Cooperation with stakeholders includes incorporating them to the development of the organization; they become providers of new knowledge. For this purpose relationships with external stakeholders in the form of strategic alliances are created. The starting point is identifying the intangible resources currently held by the company. Knowledge gaps are indicated and the juxtaposition of the organization together with different skills and databases. Here the process of absorption can be carried out using different methods. The choice depends on how the knowledge is recognized.

One way is the method suggested by Weissenberger-Eibl. This method involves the identification of knowledge, its transfer, modification depending on the needs of an organization, application, administration and control. Subsequent actions are jointly carried out by the two organizations. The definition of the vision of an alliance begins. Each of them leads to the acquisition, skills and knowledge flow from one organization to another. It brings about negotiations which from the assets of knowledge should be transferred or jointly developed. As a result of the negotiations there might be a redefinition of the assets of knowledge protected and potentially divisible. After the creation of the vision of the alliance the knowledge assets are determined precisely and they will be transmitted or (and) jointly developed. Each partner may then proceed

to the preliminary assessment of gains and losses, which he may have suffered as a result of participation in the transfer of knowledge. When the assets of the transferred knowledge are definitively stated, there is a selection of methods of the transfer (Mikuła 2004: 32).

One of the forms of interaction with the outside of an organization that promotes learning is a strategic alliance; it is a long-term and regulated cooperation between entities/subjects (Levinson and Asahi 1995: 50–63). Alliance assumes a broader scope, cooperation also covers the potential policies and limited number of partners.

An important aspect is also trust between organizations. It facilitates communication and collaboration and recognition of the new desired external knowledge. It also contributes to the fact that the organization does not need to develop their own knowledge, it acquires knowledge from the outside. Thus, faced with the need of new knowledge does not require any new skills. The intensity of interaction is also important. Repeated interactions received considerable attention from researchers. They enhance the ability of organizations to acquire knowledge from other organizations and to assess its suitability (Yli-Renko, Autio and Sapienza 2001: 587–613).

A separate problem is the phenomenon of free-riders. It refers to the passive attitude of one or more partners who wish to gain the fruits of joint efforts without any contribution. This requires from managers not only the implementation of mechanisms for the protection of knowledge, but also the monitoring of the contribution and control of efficiency. The efficiency of an organization learning remains in connection with the protection of knowledge. Thus, the absorptive capacity of organization requires actions from the members of organization and from external partners. Apart from the innovation-oriented interorganization learning processes essential for achieving competitive advantage is the ability to learn from competitors and access to resources. The place of creating an innovation moved from the borders to the inside of an organization, and the interactions increase the absorptive capacity of the organization (Ghoshal and Barlett 1988: 365–388). The concept of “learning races” that is mutual learning gained considerable attention from researchers. It revealed the willingness of companies to enter into alliances only to acquire knowledge of a competitor by deliberate recognition and mobilization of its intellectual capital. Such firms bring together knowledge from many sources, while efforts to reduce the exposure to similar efforts from the part of competitors. Finally, it is hard not to notice “the spilling of knowledge” in the surroundings, through outsourcing relationships or the phenomenon of employee turnover. In the long term it is very difficult to control knowledge as it becomes the property of a business environment. The processes of interaction between companies can be tested using the chain analysis (Porter 1990: 199).

Due to the complexity of the environment and the risks associated with the absorption of knowledge from another partner organizations can adapt to their surroundings using these ways: information management, strategic responses, flexibility, direct impact on the environment. Management of information is essential for shaping the understanding of the environment and involves the formation of the connectors with the outside. They may be workers who have as the task to observe the surroundings. Strategic response is maintaining the status quo strategy, its correction or amendment. The status depends on the environment of the organization. Designing and flexibility of organization allows you to adapt it to the surrounding conditions to his uncertainty and variability. In addition, the organization may have a direct impact on the environment.

5. Conclusions

General environment refers to factors that affect organizations indirectly, including political, economic and social/demographic. Interactions with the outside, next to the basic knowledge, organizational structure, investment in B & R, age and size of organization, skills and knowledge of workers, knowledge protectors are enumerated in the literature as determiners of absorptive capacity. Moreover, this situation is not valid just for commercial organizations, but also those operating not for profit. These were seen as “internally and externally bureaucratic, inefficient and homogeneous” and supplying “public services”. Meanwhile, turbulent environment, expectations of stakeholders, the complexity of the processes inside the organization, are just some of the factors which force them to compete, including effective identification, assimilation, transformation and the use of knowledge. It has been shown that public organizations as those serving the society are and must be open to stakeholders and they must imitate the efficiency of economic organizations. However, an organization should be aware with which entity it should have active relationships and how to achieve it. Identification of the main actors, their knowledge, interests, positions, alliances and their importance to the organization will allow managers to interact more efficiently with key subjects in the surroundings and to acquire their support, which consequently leads to further increase in efficiency of the organization, to building and strengthening the absorptive capacity.

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The image of Norway as a tourist destination perceived by Slovaks

Abstract: The aim of the paper is to investigate the image Norway as a tourist destination has in Slovakia. This was done through an analysis of Slovakian guidebooks and brochures about Norway in terms of photographs used in them. After conducting a literature search, no research could be found that had previously measured the image of Norway in Slovakia. Therefore the data gathered can be used to better understand and adjust the projected image as well as gaining further understanding of how the projected image is reflected in the perceived image. Afterwards the research question was posed and the paper was delimited to cover photographs in guidebooks, travel agency brochures and online photography-sharing web sites. The main distinction in image that this paper utilizes is between projected and perceived image. The projected image influences the perceived image however the perceived image is different from person to person because of different values, perspectives and beliefs. Specifically, the images emitted in guidebooks and travel agency brochures were examined. Consumers who partake in information searches in guidebooks and brochures reduce their uncertainty and increase the quality of the trip. These information sources both reflect the existing image and at the same time act as image creators. The projected image is not the only factor that shapes the perceived image of a destination. Social demographics such as marital status, age, occupation, previous travel to the destination, level of education and income are all significant variables affecting the perceived image. Theory about the perceived image found in social networking websites was then examined. There exists a discrepancy between the number of people who post photographs on online photo sharing web sites and the people who look at the photographs. There is a small minority of people under 35 who mostly post photographs online. The two main methods to study photographs are through content analysis and semiotic analysis. Both methods were used in the paper. Content analysis was used to find the number of occurrences of different attributes in the photographs, whereas the semiotic analysis strived to deconstruct the “myths” in the photographs.

Key words: image, tourist destination, projected image, perceived image

JEL code: M31

1. Introduction

Image is of paramount importance because of its role as pre-purchase experience. The tourist consumption does not start with the physical consumption of a landscape. Instead a destination is cognitively and metaphorically consumed through its packaging (the brochure or guidebook) and its image (Tresidder 1999: 142). There are many external sources that can influence our image of a destination. These sources include, but are not limited to, guidebooks, brochures, television programs, movies, public broadcasts, newspapers, friends' recommendations, advertisements and so on. As consumers readily search for information about a destination, their image of that destination is then influenced by the new information.

This information gathering process is the first step towards the purchase of the product or service (Wong and Liu 2011). This is why projected image and projected information is so crucial in convincing potential tourists to visit a destination and it may also be the reason for the popularity of image studies within the tourism literature.

2. Methodology

The objectives of the paper can be formulated as follows:

1. To explain the projected image of Norway in Slovakia.
2. To explain the perceived image of Norway by Slovaks.
3. To compare and contrast the projected and perceived image.

More concretely, this paper strives to answer the following research questions. First of all, what is the image being disseminated by Slovakian tour operator brochures and travel guidebooks of Norway as a tourist destination? Secondly, how does this image relates to the perceived image found on online photo sharing sites? We delimit the paper by not examining the image emitted from Norwegian destination marketing organizations (DMOs) or other image sources.

Another limitation is that photographic materials from only three main sources are used. Nevertheless, by focusing on guidebooks, brochures and online photography sites, a more in-depth study of these particular mediums can be performed. If DMOs' photographs had been used, this would have further diversified the portfolio of photographs and a more holistic impression would have been created. Analysing text accompanying the photograph would also better the analysis of an image.

We chose the qualitative research form because there has been no research about what the projected or perceived image of Norway in Slovakia is, thus making the research exploratory. Therefore, this paper takes an inductive approach in the sense that no formal hypotheses are developed before conducting the research. The term inductive is understood here as using empirical data in order to draw general knowledge about theory which is commonly used in exploratory research (Andersen 2003: 39–41). However deductive and inductive research approaches are often intertwined making it difficult to separate the two approaches in the real life (Andersen 2003: 39–41). Thus the conceptional and methodological framework to categorize the photos in this paper can be seen as a deductive approach since its theory has already been derived from other authors, e.g. from Jenkins, Albers and James.

A weakness of this study is its lack of external validity, in other words, it is not generalizable. Generalizability can be defined as to which extent the research results are applicable in other research settings (Saunders et al. 2003: 102). A study of Norway as a tourist destination cannot be generalized and does not find general rules or laws that are applicable in other settings.

The research material are all the data from travel brochures/catalogues, guidebooks and online photography sharing sites that was collected in the spring of 2011. The Slovakian tour operator association was contacted and they listed five of their members as selling package tours to Norway. An extensive internet search was conducted in order to find more tour operators who sell Norway as a tourist destination. These searches yielded six more tour operators who sell package tours to Norway. Some of these tour operators are highly specialized.

The guidebooks chosen for this study were all guidebooks about Norway that are available in bookstores in Slovakia, the total number of guidebooks found was eight. A preliminary discovery was that many of the guidebooks sold in Slovakia about Norway were written in Czech language and by Czech publishers. The lack of guidebooks about Norway written in Slovak language indicates a lack of demand and interest. Also some of the guidebooks are originally published in German and English and then translated into Czech. Therefore the photographs found in the Czech guidebooks are quite possibly the same in other guidebooks found in other countries and languages published by the same publisher. In gathering information about the perceived image we choose to use online photographic-sharing sites to discover what kind of photographs the tourists themselves choose to take and that they perceive. The websites used for analysing the perceived image were Flickr (www.flickr.com), Photobucket (www.photobucket.com) and Picasaweb (<http://picasaweb.google.com>). Panoramio is another website that allows users to upload their holiday photographs.

When entering the term “Norsko” (Norway), it has generated on three portals: 85,470 matches on Picasaweb, 2,973 matches on Flickr, and 244 matches

on Photobucket for the search term, respectively. This data show that Picasaweb is the most popular service among the three for Slovaks and/or best website in labeling, tagging and searching for photographs among its users.

3. Literature review

There is a vast amount of literature regarding destination image. However, analysing and comparing the emitted image from tour operators and travel guides/books with the perceived image of online photo sites has been researched. Specifically, a little research in the literature has investigated the process of photo-taking and photo-sharing by tourists (Caton and Santos 2007, in Lo et al. 2011). Also little research has been done of photo-sharing within the realm of online media (Lo et al. 2011).

Previous studies on images primarily focused on comparing the image of a destination with another, measure changes in a destination image over time or to just measure the image of one destination (Heimtun 1997: 6). Later studying the image among different categories of tourists has become more popular. Such as the difference in image between pre- and post-visit (Heimtun 1997: 6). It is especially within the field of marketing that existing studies on image has been conducted. These studies have focused on the content of the image, but not so much on analysing and understanding the implications of the image and its significance (Heimtun 1997: 1).

3.1. The concept of image

It is acknowledged in the literature that the attractiveness of a destination is positively connected to its image (Prayag 2010). Image is especially salient in the tourism setting because the products are rather intangible, but also because holiday trips to far away destinations are not a frequently bought product like other commodities and as such the consumer has limited knowledge and experience with the product (Tasci and Gartner 2007). The image fills the knowledge gap the consumer has.

Therefore, it is important to understand what image is being projected of Norway to the potential tourists in their decision making process. The image emitted from tour operators, travel guides and social networks are of paramount

importance because Slovakian tourists who are looking for potential tourist destinations will be exposed to these information sources not only *a priori*, but also *in situ* and *a posteriori*.

There is little consensus in the literature about how to label, classify and categorize image as a concept. As a result there is a plurality of definitions and models in the literature on destination image. Even though there is little consensus, some models are more popular than others and some are similar to one another. Destination image as a whole can be dichotomized into the perceived and projected image. The projected image can be differentiated into the concept, design and implementation stage in the case of images constructed for commercial purposes (Rodriguez et al. 2010: 15). Destination image includes the way the locals view their destination, the projected image that is constructed and promoted for a commercial interest, the perceived image and the remembered image (Rodriguez et al. 2010: 15).

A destination can have a primary and secondary image (Phelps 1968). Secondary sources are from travel guides and brochures, but also informal sources such as conversations between friends. The primary source is to experience the destination by oneself (Phelps 1968). However this categorization fails to incorporate the difference between formal and informal sources or between organic and induced sources. Simply speaking, the organic image is the preexisting image a person has of a destination, whereas the induced image is the overt processes used by marketers and the like to attract travelers to a destination (Gunn 1972). According to Shields, image is not necessarily rooted in reality and image may be the result of stereotyping (Shields 1991: 60).

What is an image?

The tourism system creates and disseminates images of a territory and as such the tourism system becomes an active agent in the reconstruction of the landscape (Rodriguez et al. 2010) because the tourist destinations depends more on the images than on real characteristics of the destination (Rodriguez et al. 2010). Local residents, politicians, investors, tour operators and retailers design, shape and transmit a unique image of their area in the construction of the destinations identity. This can be extended to guidebooks written about a destination and images published online by former visitors. The culture, personality, traditions, history, beliefs and language are all a part of what makes a destination unique (Rodriguez et al. 2010: 15).

3.2. Image types

Gunn (1988) designed a 7-stage model that accounts for different points in time when we accumulate mental images. The first step includes the gathering of mental images about the tourism destination. The second phase is the adjustment of those images by gathering further information. The third step is to make the decision to travel. The fourth step is to embark on the voyage. The fifth step is to visit the destination, while the sixth step is the return travel home, and finally, the seventh step is to accumulate new images based on the previous experience. These steps or phases represent opportunities for the destination image to be modified.

Information sources used to create an image of a destination can be categorized as internal and external. Internal sources refer to past personal experiences while external sources can be formal, like travel agents, or informal, like information from friends and relatives (Baloglu 1997: 223). The organic image comes from non-commercial information sources such as word of mouth (Tasci and Gartner 2007). Books, television or magazines can also give an organic image of a destination. An induced image, on the other hand, originates from tourism specific information such as brochures or internet advertisements of a destination, and is therefore created through marketing efforts. And finally, complex image is the result of travelling to the destination and experiencing it (Fakeye and Crompton 1991). However, the induced image plays a very little role in the destination image formation compared to organic sources because it has less credibility, scope and impact (Gartner 1993). Therefore, it matters whether the image is derived from organic or induced sources when consumers choose their destination brand (Prayag 2010). Yet from an empirical perspective, organic, induced and autonomous image formation agents are intertwined due to diligent efforts by destination marketers. Media relations and partnerships among tourism agents negate a clear distinction and mutual exclusiveness among the categories (Gartner 1993, Selby and Morgan 1996). But even so all of these image classifications are theoretical constructions and reality is not as clearly defined and delimited as these constructs. In the plurality of models available on destination image not one specific is correct. This paper views the models as categorizations that all contribute to the understanding of the topic at hand.

3.3. Projected and disseminated image

A destination projected image is often equated with destination brand in order to attract potential tourists. The destination brand includes functional and psychological attributes. Functional attributes consist of infrastructure, amenities, facilities or accessibility, while psychological attributes includes the atmosphere, safety and friendliness (Echtner and Ritchie 1991). These two components combined create the main image of a destination (Gartner, 1993). Destination image has also been categorized along such components as attribute-based images, holistic impressions, and functional psychological, unique and common characteristics (Echtner and Ritchie 1993).

Miossec (1977) categorized disseminated image into three parts, namely: universal image, ephemeral image and induced image. The universal image is the historical image that developed over time and that is generally accepted. Ephemeral images are as the name suggests often images with a short life-span. There are more recent interpretations of the destination image created by for instance media or literature. And the induced image is the image that is created by marketers in their attempts to sell the destination to potential tourists. A problem with the induced image is that it is not considered so credible as for instance direct experience or word of mouth which is considered to be the most credible source of information on a tourist destination.

Yet the induced, universal and ephemeral images all reproduce signs with a socially constructed and disseminated meaning (Galí and Donaire 2004: 777). The transmitter spreads concepts, attributes, values, impressions, smells, words and visions, which in turn is perceived and interpreted by the tourist based on what psychology, anthropology, geographic location, culture and family setting the tourist come from (MacKay and Fesenmaier 1997: 538, Galí and Donaire 2004). From this we can classify tourism image as being composed of a subjective construction and a social construction at the same time (Galí and Donaire 2004: 778). This exemplifies that we cannot expect to fully shape or control the image a person has of a destination. However, we can seek to understand and shape the way a destination is portrayed.

Other studies support the notion that there is a discrepancy between the perceived and the projected image of a destination (Choi et al. 2006, Stabler 1987). This can be caused by the subjective construction we as individuals have of a destination which differs from the social construction. However, it is also plausible that the projected images measured in those articles do not correlate sufficiently with the holistic social construction which is composed of many diverse types of projected images. Projected images are not only effective before embarking on a voyage to a destination. If a visit occurred a long time ago then it is more likely that the tourist recall less and inaccurate information about

a given destination. The consequence of this is that tourists who have already visited a destination are still receptive to projected images such as promotional material from a tour operator. It has been suggested that the default tourist preference in heritage tourism specifically is a simplified and romantic version of the place and history as opposed to a more nuanced image of how life was like in the past or the current struggles of the locals (Vesey and Dimanche 2003: 55). Caton and Santos (2007: 372) use this as an example of how some icons representing meaning are ignored while other, more favourable, meanings are marketed and consumed in heritage destinations. Not all icons of a destination can be shown to tourists who have limited time and patience. Therefore, excerpts of the available icons must be chosen and presented based on who the recipient is and what market segment he or she belongs to.

However, caution should be exercised when projecting an image of a tourist destination. It is logical to assume that the projected image of a destination affects the expectations of the product. If the pre-purchase expectations do not match the outcome of the journey then non-confirmation occurs. As a result, the consumer becomes dissatisfied with the product (Oliver 1980). Satisfaction and realistic expectations are important because a dissatisfied customer is less likely to revisit or to recommend the destination to friends. Intention to revisit and intention to recommend the destination to friends have been used in the literature as the two main indicators to measure satisfaction with a destination. Other research shows that a positive image and a positive experience will yield a moderately positive evaluation of the destination, while a negative image and a positive experience yields a very positive evaluation of the destination by tourists (positive incongruence). In other words, a destination with a poor and negative projected image can receive positive evaluations given that it provides the visitor with a positive experience. Therefore, the level of satisfaction with a destination is an inaccurate indicator of the image of a destination.

As a measure to prevent dissatisfaction it is argued that either the product has to be improved to meet the expectations or the parts of the product that did not meet the expectations should be de-emphasized in the promotional material as a preemptive measure (Fakeye and Crompton 1991: 14). Therefore, the projected image should be based upon the real life identity of a destination (Go et al. 2004, Beerli and Martin 2004). In other words, the disparities between the disseminated image and perceived image *in situ* should be minimized. Equilibrium has to be attained between emitting a too favourable image on the one hand, and a more negative but realistic image on the other. Emitting a very positive image of a destination is important in attracting new visitors to come to a destination in a competitive market.

However emitting a realistic image is just as well important in order to avoid disappointment *in situ*, which may result in fewer return visits and fewer personal recommendations to friends about the destination. If an image is

pleasant and meets the expectations of the tourist then the image is less vulnerable to alteration (Gunn 1988a). This can be beneficial in case of new negative ephemeral images appear in newspapers or TV. But also in general images are slow to change (Gunn 1988b). Fakeye and Crompton (1991: 10) argue that even a long time after the factors that shaped an image have changed the positive or negative image may still continue. This can be a challenge because destinations evolve and change. Destinations that have a perceived image of being traditional and historical can face challenges when trying to project modern facilities and new infrastructure. So what is a successful projected destination image? The image should be strong and positive (Alhemoud and Armstrong 1996), but also have distinctive features in order to differentiate itself from the originating destination of the tourist (Bramwell and Rawding 1996). In other words, the destination needs to have a unique selling proposition. If it is not unique then the destination is more comparable to other destinations. Generic products that are unsuccessful in differentiating themselves from their competitors have to compete with lowering prices as an instrument which is undesirable. When prices are similar the destination image is the determining factor in choosing the destination (Goodall 1992). This view is supported by Mayo and Jarvis who argue that if a destination cannot easily be differentiated from similar destinations then it is less likely to be chosen as a travel destination (Echtner and Ritchie 1993). However, destination marketers should equilibrate their projected image between exotic and more standardized or normal images. It has been argued that images illustrating exotic or unique features of a destination have caused anxiety and discomfort in potential tourists (MacKay and Fesenmaier 1997, Hunt 1975).

An image study of Norway in general, and northern Norway in particular, showed that the challenge in branding the destination was to combine the unique and harsh conditions with a warm and hearty atmosphere and perhaps a feeling of safety as well (Prebensen 2007: 754–755). It is important for destination promoters to project a message of a destination that reduces uncertainty for the tourist in order to make the destination more attractive *a priori*. This is especially important towards tourists with different cultures and values (Martin and Bosque 2008). The fewer social conventions the tourist shares with the destination, the more uncertainty the tourist will have about the destination. Acknowledging these complexities in the image, it is important to develop good marketing strategies and to unique brand for a market niche (Martin and Bosque 2008). It is crucial to create a unique destination image to differentiate the destination, but not at the expense of reducing tourist comfort.

3.4. Perceived image in social networking websites

Internet as an information source is accessible, convenient to update with real time information and has interactive communication options (Bonn, Furr and Susskind, reported in Frias et al. 2008: 164). Therefore, internet can diminish the importance of travel agencies in the information gathering process (Buhalis 1998). Furthermore, the vast amount of information about a destination on the internet can lead to information overload, stress, confusion and discomfort (Frias et al. 2008: 167). This information overload and then turn into a lower overall image of a destination because of discomfort with the difficulty in understanding the situation (Frias et al. 2008: 174). However, tourists who only use travel agencies as their information source do not suffer from the same information overload and have more positive image of the destination (Frias et al. 2008: 174). This research can surely be applied in the setting of online picture sites like Flickr and Panoramio because there is a vast amount of pictorial information available without a clear structure or presentation of the content. Other studies show the positive aspect of internet such as that it gives greater involvement with the environment of the message (Shih referred in Frias et al. 2008).

The tourists who post online social content of a destination on the internet do not have an obligation to promote it (Pan, MacLaurin and Crotts 2007). Therefore, people regard this information source as more reliable. Sharing information over the internet is not a product such as guidebooks or package tours and therefore the sender of the message has no economic incentive to sugar-coat the experience.

However, studies show that especially young people use online media in order to manage their desired self image and that images shared online may be part of this image formation or re-formation (Lo et al. 2011: 730). At present only a minority of tourists (mostly under 35 years of age) post photos online and they are (Lo et al. 2011: 730). However, online social media and photo-sharing sites are increasingly becoming popular which is why it must be taken seriously by destination managers (Lo et al. 2011: 730). There is a discrepancy between the number of people who use consumer generated media like online photography sites and the number of people who create the content on these sites (Yoo and Gretzel 2011: 609). In other words, there is a small number of people who create content on for instance online photo-sharing sites that influences a larger group of receivers.

Former studies have used online social media as an indicator of the perceived image of a destination (Koerte et al. 2009). This is congruent with the methodology we use in the research of looking at photographs in online photo-sharing sites as an indicator of the perceived image. A problem with this

approach is that as already mentioned not all tourists post their photographs on these web pages. Since it is mostly young and presumably IT savvy people who posts online, a weakness of this paper is that it does not reflect the perceived image of elderly tourists to the same extent.

3.5. Photographs

It has been argued that tourists reproduce projected photographs. Before going to a destination a visitor is influenced by projected images. Upon arrival at the destination the tourist will then most likely visit the attractions that were projected to him beforehand and record it with a photograph. These photos are then disseminated amongst family and friends who again influence the perceived image of others.

Images that the tourist has seen from other sources like internet or guidebooks are then reproduced in a hermetic circle (Jenkins 2003: 308). Jenkins in her study of Australian tourism images found that these images are produced, projected, perceived, propagated and perpetuated in a circulatory manner (Jenkins 2003: 324). Tourism in itself can be regarded as a search for photographs and travelling as the strategy used to collecting them (Urry 1990: 139). This perspective reduces the tourist to a static camera operator who goes where the guidebooks and travel brochures project. Yet empirical evidence found by Caton and Santos supports the hermetical circle theory.

Analysing photographs can be done either through a content analysis or a semiotic analysis (Jenkins 2003, Albers and James 1988). Content analysis is descriptive and focuses on attributes, while semiotic analysis has a more holistic approach for discovering meaning and symbols. However, the latter approach is very subjective and culturally influenced (Jenkins 2003). Semiotic analysis strives to contextualize the photographs in order to reveal the ideological discourse in that time and place (Albers and James 1988). While content analysis uses sets of categories in order to measure and compare groups of images. Such measurements can include the frequency of subjects, colours, poses, landscapes or photographic techniques (Jenkins 2003). One way to create these domains or categories is to organize the photographs around their focal themes (Albers and James 1988). In the part concerning findings we will present the categories of photographs according to what their main feature is.

4. Findings

4.1. The emitted image of Norway in Slovakia

Generally, the travel brochures and guidebook photographs seems to be carefully selected and tailored to fit the accompanying text, whilst the photographs found on online social media are cruder and unedited. For instance four photographs of the same mountain from slightly different angles were found among the online social media photographs. This type of phenomenon therefore increases the uniformity of the photographs found online.

4.1.1. The promotional image

The promotional image in this context refers to the front page of the travel agency brochures and guidebooks as opposed to the supplemental image which are the photographs found within the brochures and guidebooks. It is an important study object because it is the first impression a potential tourist will have of the guidebook or brochure. Next this promotional image will be categorized and discussed in coherence with other articles on the subject. All the photographs on the front pages will be analysed according to the aforementioned categorization.

Table 1. A categorization of the focal point of the photographs on front pages (%)

Photographs depicting	Travel brochure front page photographs (n = 34)	Guidebook front page photographs (n = 8)
Group fun	0	0.0
Romantic couples	0	0.0
Landscape	21	75.0
Famous landmarks	56	12.5
Animals	3	12.5
People	9	0.0
Active sports	12	0.0
Passive activities	0	0.0

Source: own elaboration based on the primary research (2011).

Table 2. A categorization of the focal point of different landscape types found in front page photographs (%)

Photographs depicting landscapes	Travel agency brochures (n = 7)	Guidebooks (n = 6)
Fjords	0	83
The sky	0	0
Sea/Lake	43	0
Mountains/Green area	57	17

Source: own elaboration based on the primary research (2011).

Table 3. A categorization of properties of persons depicted in front page photographs (%)

Photographs depicting people	Travel agency photographs with people (n = 11)	Guidebook photographs with people (n = 1)
Total number of photographs with people	32	12.5
Tourists	82	100
Locals	18	
Garments		
Summer clothes	36	100
Sport/hiking clothes	45	
Traditional clothes	18	
Winter/rain clothes	0	
Indoor	0	
Portrayal		
Candid	55	100
Posed	45	
Gender		
Male	45	100
Female	36	
Both female and male	18	
Age group		
Adult (18–65)	73	100
Youth (0–18)	18	
Senior (65+)	0	
Mixed age	9	

Source: own elaboration based on the primary research (2011).

4.1.2 Travel agency brochures

One of the main findings of the brochure analysis is that most of the brochure covers did not feature photographs of Norway at all. Norway is not always sold as a standalone product but rather as part of Scandinavia or the tour operator/travel agency has one big catalogue of all its tours in which the front page

is not from Norway. This can indicate that Norway is not a product that is specifically promoted or highlighted above other destinations. As shown in the introduction part of this thesis few Slovak tourists visit Norway per year, which can explain why Norway is given little emphasis in the promotional material. However, if Norway was on the front cover, more Slovak tourists would come to explore the country.

The biggest difference between the guidebook front pages and the front pages found in the tour operator brochures is that the latter rarely show photographs from Norway. This makes sense when keeping in mind that most of the travel agency brochures contain information about many other different destinations than just Norway. Only 4 out of 11 front page photographs appear to be of Norway. Out of the 11 tour operator brochures, one is selling only tours to Europe, two are selling trips only to Scandinavia, and one is only selling trips to Norway. The remaining 7 tour operator brochures are selling tours to all over the world. The "Firotour" brochure is selling tours not only to Norway and Europe, but also to the whole world. Yet, they chose to use the Norwegian landmark Preikestolen as their front page photograph. However, the front page of this brochure lacks the necessary caption to inform the potential tourist that the photograph has been taken in Norway.

Another common feature of the travel agency brochures is that they commonly use collages of photographs to make up the front page. Four out of 11 front pages had collages of several photographs. It is a way of showing the diversity of the brochures and to expose the audience to more than just one destination. However, using only one photograph on the front page makes the brochure more distinguishable from others and it sends a clear message that the site chosen for the front page is especially recommended. It is better to focus on one image on the front page. The consumer has a limited time and attention span which is why the front page needs to capture the attention of the consumer and not to flood the consumer with a variety of different and smaller photographs to process.

The bulk of photographs in travel brochure front pages are of famous landmarks. All except one of these famous landmarks are not from Norway, but from countries like Egypt and France that show the Pyramids and the Eiffel Tower. Therefore, the landmarks on the front page except from Preikestolen, have absolutely nothing to do with Norway, which is why we will not do a in-depth analysis of them. However, it is an interesting discovery that the travel agency brochures that sell tours to Norway for the most part do not show Norway in the photographs on the front page. Group fun, romantic couples or passive activities are not found in the front pages. Four photographs show active sports like climbing however all of these photographs belong to the front page of the brochures "Rokosport" that specializes in sport tourism. Landscapes and people are also a popular motif. However, for some unknown reason fjords

are not depicted, but the sea and mountains are often shown and often in conjunction with other people in the foreground. The people in this regard are mostly tourists in summer or sport clothes.

4.1.3. Guidebooks

Only 8 guidebooks of Norway were found, which makes the data material too small for analysis. Nevertheless, 5 out of 8 (62.5%) guidebook front page photographs features the fjords, but none of the photographs are of the fjord itself. However, this high number is not reflected in the photographs found inside the guidebooks. Within the guidebooks only 10% of all the photographs show fjords. This discrepancy means that the fjords are used as an attention grabber and as the first thing that the potential buyer will see. And to a lesser extent, fjords are supplemental material within the guidebooks. It is peculiar why the use of collages is often used in travel agency brochures, but not in guidebooks. The guidebooks also contain a vast amount of information about different destinations and sights, although only within Norway or Scandinavia, yet no collages were found on the front page like in the case of travel agency brochures. Brochures rely more on visual aids to signal and propagate the content. In common type of guidebook front page about Norway, the fjord is the centre of attraction. There is nice weather and there is something in relation to the fjord, e.g. a cruise ship, to signify the sheer magnitude of the fjord. A common feature in especially the guidebook front pages is the use of images of or relating to the romantic ideal. Landscapes and nature dominates the front pages.

The projected product image is to come to peace with oneself and the surroundings, which is achieved through solitude and admiration of untouched nature. The need to escape everyday life and stress is a powerful motivator. Some prefer lying on the beach or drinking cocktails in the hotel, while others are more relaxed in nature away from people and the everyday comforts of life. It is the latter segment that the guidebooks advertising Norway are appealing to. However this strong focus on fjords is not unproblematic. At first glance it can seem as if Norway is all about fjords. The diversity in different attraction and sights in Norway is not shown on the front pages. The nature-based tourism attractions like the one in question gets the attention while other cultural or historical attractions are neglected on the front page.

4.1.4. Geographical representations in the promotional image

An interesting analysis is to find out where the front page photographs in the promotional image are taken. We will illustrate this using the map of Norway. Photographs on front pages not taken in Norway will be excluded because they do not represent the projected image of Norway and are therefore considered irrelevant.

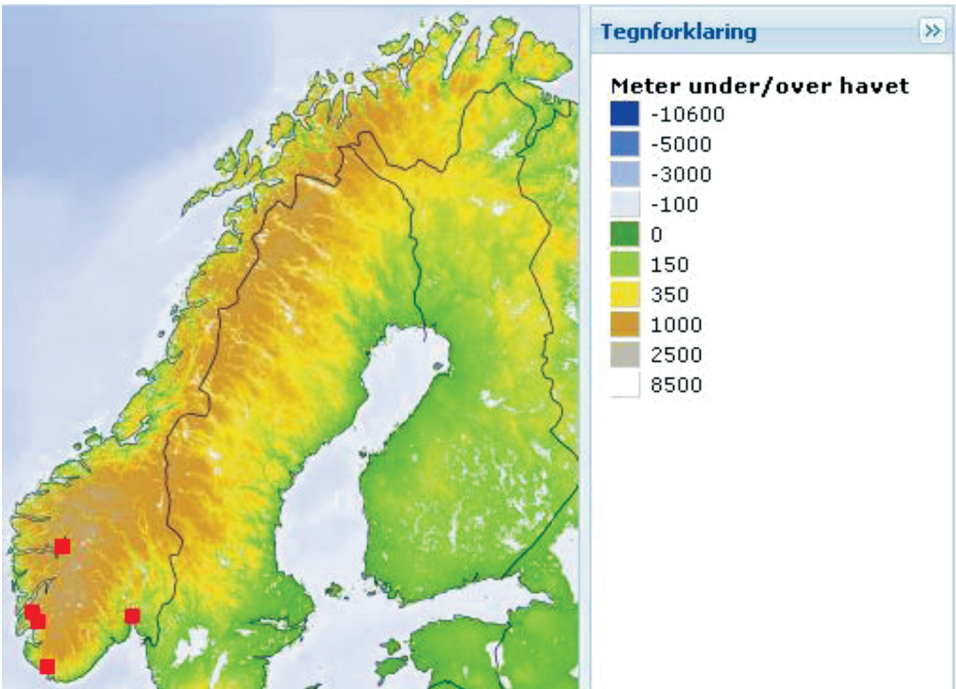


Figure 1. Geographical representation of front page photographs

The red dots indicate where the front page of the guidebook or tour operator brochure was taken. This illustration has however some serious drawbacks. Many of the front page photographs were not taken in Norway, and secondly, some photographs that in all likelihood were taken in Norway do not say specifically where they were taken making it difficult to pinpoint the location because Norway has fjords and mountains from north to south. Therefore, the red dots on this map are where the guidebook or brochure explicitly states the origin of the photographs. As we can see the most popular place to project promotional images of Norway is in the south by the fjords. It is problematic that the north is neglected seeing as it has some of the greatest tourist attractions in Norway such as the Midnight Sun, Aurora Borealis and indigenous Sami people to name a few.

4.1.5. The complementary image

We will categorize the complimentary image using a quantitative methodology. The complementary image is created by the photographs found inside guidebooks and brochures. The guidebooks and brochures are also a measurement of the emitted image.

Table 4. Categorization of the focal point of photograph, excluding the front page (%)

Photographs depicting	Travel brochure photographs (n = 187)	Guidebook photographs (n = 1,009)	Online social photo sharing site pictures (n = 860)
Group fun	1.0	0.7	1.2
Romantic couples	1.0	0.2	0.4
Landscape	57.0	23.0	53.0
Famous landmarks	9.1	11.2	5.3
Animals	5.3	5.1	4.2
People	3.7	10.3	9.2
Active sports	2.7	5.0	2.6
Passive activities	7.5	3.7	7.2
Other	12.3	39.6	16.9

Source: own elaboration based on the primary research (2011).

Table 5. Sub-categorization of the focal point of photographs depicting landscapes, excluding the front page (%)

Photographs depicting landscapes	Travel agency brochures (n = 107)	Guidebooks (n = 242)	Online social photo sharing sites (n = 456)
Fjords	42.1	40.9	28.9
The sky	0.0	0.4	1.5
Sea/Lake	11.2	9.5	18.0
Mountains/Green area	47.0	49.6	51.5

Source: own elaboration based on the primary research (2011).

Table 6. A categorization of properties of persons depicted, excluding the front page (%)

Properties of people	Travel agency photographs with people (n = 64)	Guidebook photographs with people (n = 285)	Online photo sharing site photography's with people (n = 186)
1	2	3	4
Total percentage of photographs with people	34.2	28.2	21.6
Tourists	87.5	44.6	92.5
Locals	6.3	50.5	7.0

Table 6 continued

1	2	3	4
Garments			
Summer clothes	42.2	33.3	35.5
Sport/hiking clothes	42.2	20.3	23.1
Traditional clothes	6.3	18.9	2.7
Winter/rain clothes	1.6	7.7	23.1
Indoor	0.0	8.4	9.7
Portrayal			
Candid	53.1	80.0	72.6
Posed	46.7	14.7	26.9
Gender			
Male	42.2	36.8	44.6
Female	14.0	11.9	29.0
Both female and male	28.1	44.6	22.0
Age group			
Adult (18–65)	85.9	67.4	82.3
Youth (0–18)	1.6	4.2	7.0
Senior (65+)	4.7	4.6	0.0
Mixed age	0.0	17.5	7.5

Source: own elaboration based on the primary research (2011).

After going through the data it became obvious that guidebooks offered the most variety in types of photography. Therefore, travel agency brochures have a very limited space to cover each tourist destination so they have to use that limited space more effectively than guidebooks that have a large number of pages available. It is also plausible that travel agency brochures are used to capture the attention towards the trip and to persuade the potential tourist to embark on a trip. Whereas guidebooks are intended to show not only what there really is to do in a destination once the decision to go there has been made, but also give information about the history, culture, language and practical information. This trend is evident by looking at the overall percentage of photographs that fall into Jenkins' categorization of photographs. In the case of guidebooks 39.6% of the photographs do not fit in to any categorization while only 12.3% of the travel agency photographs cannot be included in the categorization set. These photographs are labeled as "other."

The overwhelming majority of photographs found inside travel brochures depicted landscapes with fjords and mountains being the most popular type of landscape. This is similar to the promotional image. It is safe to say that this is the unique selling proposition of Norway, which makes the country unique when marketing it in Slovakia. However, the complimentary image is also more dispersed compared to the promotional image. Except for the fjords and mountains there is not any other distinctive tourism image being projected. In

other words there is a void of other popular images than fjords and mountains being projected. Another discovery is the lack of youth and teenagers depicted in the photographs. Norway is not portrayed as a family destination. Instead there is a focus on sport and adventure tourism which is also apparent in the sport clothing worn by the tourists in the photographs in the travel brochures.

The focal point of the majority of photographs found in guidebooks, travel agency brochures and online social media are landscapes. Many of the animals depicted in the projected image have one thing in common: They are not often seen in everyday life in Norway. The photographs very rarely showed cats, dogs or other domestic animals. Instead more “exotic” animals such as seals, ice bears, sharks, bears, wolves, reindeers, whales and foxes were shown. Exotic animals can be seen as a tool used to romanticise Norway as a destination. Furthermore, showing rarely seen animals on photographs is appealing because of their uniqueness. Indeed tourism is about selling experiences not found in everyday life.

Out of all the photographs in the guidebooks about 10% of them show people as the main focus of the photograph. It is obvious from data presented in Table 6 that there are relatively more photographs showing people in travel agency photographs than in online social media or guidebooks, i.e. 64 out of 187 photographs (34.0%) found in travel agency brochures show people in some form or setting, while only 186 out of 860 (22.0%) online social media photography show people.

It is also a point of interest to see what the photographs do not show. Photographs depicting skiing, both alpine and cross country, were almost absent in the material collected. Norway has many ski resorts, however, so does Slovakia and its surroundings. Summing up, there are arguably similarities and discrepancies between the emitted images. Travel agency brochures project photographs of much more tourists than guidebooks do. Also landscapes are more popularly shown in travel agency brochures. Yet, in the other categories the brochures and guidebooks are more correlated and unified.

4.2. Discussion

Urry (2002) argued, as mentioned before, that society has shifted from a focus of standardization to a focus on customization. This form of specialization is also found in the travel agency brochures. For instance, one of the companies specializes in fishing, while another in hiking activities. Having such a diversified and customized offer can attract overall more tourists to come to Norway.

The destination is no longer just Norway, but it is promoted as a great place for hiking, fishing or cultural activities. Therefore, people who enjoy these organized activities are more likely to come now that there is an offer customized to their needs and wants. One potential problem with this specialization is that if it gets too specialized it is harder to find an adequate amount of people willing to participate in the trip.

This post-Fordist stage characterized by high specialization is not found in the guidebooks. All the guidebooks to some extent try to cover all the basic information and do not seem specialized towards one specific segment such as hiking or cultural and gastronomical experiences. Other forums, such as specialized magazines and the like, will perhaps contain this type of specialized information about a destination intended for a narrower segment.

Another area of interest for this paper is whether or not the hermetical circle can be found within the dataset. In other words, is the perceived image found in online photo sharing sites congruent with the projected image found in guidebooks and travel agency brochures? In general the perceived and projected image are fairly correlated. There are however more photographs being projected of famous landmarks than there are photographs taken of famous landmarks by tourists. There are also more photographs of fjords found in the emitted image. It can be cheap to use a budget airline that flies to Norwegian cities, however travelling from the city to rural and remote locations where the major fjords are located is even more cost and time consuming for the tourists which may explain the variance. Photographs, especially like the ones found on the front page of guidebooks and brochures, have their limitations. On the one hand, the photograph should emit as much information as possible in order to attract the consumer, while on the other hand, if the front page is made up of collages of many small photographs the recipient might lose interest in the picture. When realizing that a photograph have different implications for different people it is evident that the study of image and communication can be an unpredictable science. Income, age and culture are some examples discussed that impact the perceived image. So all in all, is the image emitted of Norway a realistic one? For the most part it is, but that is in the eye of the beholder. If the tourist has time and money to travel around the country and off the mainland to the island of Svalbard north of the Arctic Circle, then yes if you are lucky and come at the right time it is possible to see polar bears, whales and northern lights. However, for the average tourist the cost of embarking on this type of trip would be too high. And judging from the perceived image, polar bears and whales are not seen by the tourists who come to Norway. We assume that disparities between the emitted and perceived image can cause dissatisfaction, fewer return visits and negative reviews.

The role of travel agency brochures and guidebooks is to sell the tour or the guidebook and they do not answer to the DMOs. However, it would be to

anyone interest to pool their resources in order to share market data and information about how Norway is perceived and how it is projected and to learn about the demographics of the tourist segments. By doing so all parties in the network can learn and benefit from one another because they all have a common goal, to attract more tourists to visit a tourist destination in this case Norway.

5. Conclusions

Research design and data categorization defined the key categories to be examined. Attributes about persons such as age, gender, garments, posing or not posing, tourist or local were examined as well as characteristics about the photographs such as if a photograph mainly depicted landscapes (fjords, mountain/green area, sea or the sky), famous landmarks, animals, people, active sports, passive activities, group fun or romantic couples. Most of the brochures that sell tours to Norway also sell trips elsewhere. Therefore, few front page photographs on travel agency brochures depicted Norway at all. The guidebooks on the other hand most commonly show fjords and a typical romantic image of Norway on the front page in order to entice the potential tourists. Furthermore, 4 out of 11 front pages had collages of images instead of just one single photograph and the advantages and disadvantages of this were discussed. The front page photographs that depicted Norway showed locations in the very southern part of Norway thereby neglecting the northern and arctic areas.

Guidebooks had more types of photographs than the other sources that did not fit into the defined categorization. This could be because guidebooks are intended to be informative about all aspects of a destination like infrastructure and telecommunication, whereas travel agency brochures are more promotional in nature. The most popular motif in both brochures and on online photo sharing sites were landscapes, while the most popular motif in guidebooks was photographs that did not fit into the predefined categories. Another discovery was that tourists depicted in the photographs were wearing summer clothes, while rain or colder jackets were not commonly shown, even though rain is a fairly common occurrence in Norway. The cultural aspects of Norway as a destination were not found as commonly as the natural aspects. Fjords and mountains dominate both the projected and perceived image. Norway has many skiing facilities, however skiing activities were almost not represented at all in both the perceived and projected images. This could be because Slovakia and its neighbours already have an abundance of skiing facilities which is closer and cheaper. There was also a lack of youth depicted in both the perceived and

projected image. This could indicate that Norway neither seen nor promoted as a family destination to relax with children. It also seems that pictures of rare and exotic animals like whales and polar bears are projected, while commonly seen domestic animals are barely shown. Myths about the rare and unique are therefore used to attract tourists to come, while the ordinary is marginalized. The most popular landmark photographed, both in terms of the projected and perceived image, is Bryggen in Bergen with Vigelandsparken in Oslo at second place. This roughly coincides with an indicative ranking that estimates Vigelandsparken to be the most visited Norwegian landmark and Bryggen to be the third most visited.

The romantic image was also identified in the projected image. A popular romantic image is of a person depicted from behind while gazing out on the view from the top of a mountain as opposed to a collective gaze that favours amenities and facilities and that is less preoccupied with the local culture and traditions. Nostalgic images that idealized the life in the past were also found in the projected image and analysed accordingly. Another theory that got confirmed was that photo taking is a daytime activity. Tendencies of the hermetical circle where tourists reproduce the images being projected at them were also found to some extent. Tourism as a phenomenon is in a constant state of transformation. The changes may be incremental, nevertheless tourism researchers and managers have an obligation to stay informed about the changes the tourism is undergoing.

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The links between determinants of innovation and organizational performance

Abstract: In the paper an analysis of how different determinants influence innovation and organizational performance is presented. The results of path analysis (structural equation modeling) show that research and development (R&D) financial resources, specialization and different leadership styles have a significant impact on product and administrative innovation. Those impacts are reflected in two measures of a firm's performance – objective financial reports and executive ratings of perceived effectiveness. Using the sample of 219 Polish firms from Silesia Region (with at least 20 full-time employees), this study contributes to the emerging literature on innovation by providing an integrated conceptual model.

Key words: determinants of innovation, path analysis, structural equation modeling

1. Introduction

An organizational ability to create, adapt and implement innovations may result from the existence of many diverse determinants, or factors determining the organization's innovation. These factors are dynamic. Their influence is diverse and concentrates on different stages of an innovation process. As they affect both an organization and its members, they may have an economic, technological or psychological nature.

The study was focused on linkages between a great variety of determinants, four types of innovation (product, process, technical, administrative) and organizational performance (two measures of a firm's performance were used: objective financial reports and executive ratings of perceived effectiveness).

A path analysis (structural equation modeling) was used to define the causal relationships between variables.

Determinants of innovations emerged in the literature relatively recently. Due to the fact that factors determining innovation are numerous, their aggregation becomes necessary. According to the Oslo methodology, determinants of innovation encompass four broad categories, which are:

1. general determinants – general conditions determining the scope and possibilities of innovation implementation;
2. scientific and technical institutions supporting innovation by providing technical and scientific knowledge;
3. technology transfer factors – human, social and cultural factors influencing transfer of information and learning processes in an organization; and
4. internal determinants, referred to as “innovation dynamo” – they include dynamic factors that influence an organization and have a direct effect on innovation.

These determinants of innovation indicate a marked multidirectional character of their influence. However, it should be stated that innovation is determined by both internal (organizational) and external factors. While an organization may have, and generally has, influence on its internal innovation potential, this influence with respect to external determinants is either negligible or non-existent (they are either independent of, or little dependent on the organization). The paper considers only internal (organizational) determinants of innovation. Based on a literature review, determinants frequently analysed in previous empirical studies have been identified. A novelty of the analysis is the simultaneous inclusion of all determinants in a single model.

The paper is organized as follows: first a review of the relevant literature is presented. This is followed by a brief discussion of the research methodology and the survey. Next, the research findings obtained from the empirical analysis are considered. A concluding section summarizes the paper.

2. Organizational determinants of innovation

Identification of determinants of innovation involves detailing resources necessary for generating or/and implementing innovations in an organization. A synthetic review of the most important studies is summarized in Table 1.

Table 1 indicates that a key role in the processes of generating or/and implementing innovations is played by financial capital (Xu, Sirmon and Gao 2010: 1–38) and human capital (Rothaermel and Hess 2007: 898–921; Wziątek-Staśko 2006: 119–127). These resources, according to the re-

Table 1. Conceptual approaches of organizational determinants of innovations

Authors	Organizational determinants of innovation
Kimberly and Evanisko (1981)	CEO tenure, CEO cosmopolitanism, CEO educational level, CEO committee participation, CEO involvement in business activities, centralization, specialization, functional differentiation, external integration
Damanpour (1991)	specialization, functional differentiation, professionalism, formalization, centralization, managerial attitude toward change, managerial tenure, technical knowledge resources, administrative intensity, slack resources, external communication, internal communication, vertical differentiation
Ayadi, Dufrene and Obi (1996)	R&D financial resources
Bhattacharya and Bloch (2004)	R&D financial resources
Wan, Ong and Lee (2005)	strategic human resources
Jamrog, Vickers and Bear (2006)	organizational culture
Zduńczyk and Blenkinsopp (2007)	strategy, structure, support mechanisms, behaviour
Vaccaro, Jansen and Van den Bosch (2008)	leadership styles (transactional and transformational leadership)
Wang and Kafouros (2008)	R&D financial resources
Puri and Bharatendu (2009)	slack resources, related diversification, mode of R&D, R&D intensity, aggressive posture
Xu, Sirmon and Gao (2010)	human, relational & financial capital
Qu, Janssen and Shi (2010)	leadership styles (transactional & transformational leadership)

source-based view of a firm (RBV), provide a basis for undertaking innovative activities, owing to their high value (uniqueness) and rare occurrence. Moreover, increasing these resources allows greater flexibility in conducting creative and experimental work, thus constituting a key factor of promoting innovation. Literature commonly points out to the primary importance of R&D financial capital in carrying out the innovation process effectively. Oftentimes, a lack of financial resources causes an innovative activity to be totally abandoned. Human capital comprises knowledge, skills and experience of employees. It combines the creativity of qualified workers with their experience in particular areas. Members of an organization constitute the main source of new idea and knowledge, whose application leads to developing new products/services. Moreover, tacit and codified knowledge positively affects innovation in an organization (Kolarz and Wziątek-Staśko 2007: 238–246).

Determinants of innovation are commonly emphasized in the literature. They also include: organizational culture promoting generation and implementation of innovations (Jamrog, Vickers and Bear 2006: 9–19), style of leader-

ship (Vaccaro, Jansen and Van den Bosch 2008: 1–38) and characteristics of top managers (including: the age of managers, their education level, previous job experience and tendency to taking the risk associated with innovative activity) (Ahuja, Lampert and Tandon 2008: 61–64). Leaders, as powerful internal actors, have a very relevant role in promoting innovations. In this context, the paper draws on a widely recognized distinction between transactional and transformational leadership (Bass and Avolio 1991). Transactional leadership emphasizes the links between a leader and followers, based on mutual benefits that come from this relation (Burns 1978), whereas transformational leadership is based not so much on the external motivation (an exchange relationship) as on the internal motivation of the followers.

Moreover, the complexity of technological changes forces organizations to take up cooperation. Owing to individual linkages, cooperation provides direct benefits to partners by providing them an access to a broader knowledge base. In addition, cooperation is conducive to the integration and reconfiguration of knowledge and may lead to positive effects of scale in the R&D area. Besides, regarding the network form of collaboration, cooperation facilitates the knowledge spillover effects. Partners gain access to information networks and, depending on their position in a network, they have a greater or lesser possibility of using knowledge and information available within that network (Quintana-Garcia and Benavides-Velasco 2009: 1–39).

The last group of the internal determinants includes structural determinants – some researchers (e.g. Damanpour 1991: 555–590) underscore their primary role as organizational innovation determinants. Structural determinants have been defined in different ways, and considered to constitute the core of the formal structure of organizations. This study focuses on six dimensions: specialization, two dimensions of differentiation in organizations (functional, and vertical differentiation), formalization, centralization, and administrative intensity. Specialization represents different specialties found in an organization (Hage and Aiken 1967: 503–519). Functional differentiation reflects the extent to which an organization is divided into different units (Aiken, Bacharach and French 1980: 631–652). Vertical differentiation represents the number of levels in an organization's hierarchy (Damanpour 1991: 555–590). Formalization reflects the emphasis on following rules and procedures in conducting organizational activities (Pierce and Dalbecq 1977: 27–37). Centralization represents the locus of authority and decision-making and is the extent to which decision-making autonomy is concentrated or dispersed in an organization (Bizzi 2009: 5). Administrative intensity is measured by the ratio of managers to total employees in an organization (Damanpour 1991: 555–590).

3. Metodology and measures

In order to define the causal relationships between variables, the structural equation modelling (path analysis) approach was used. This method is one of the best elaborated techniques of statistical data analysis – relying on causal interpretation methods. It enables verification of hypotheses on the structure of causal relationship in a specific set of variables, and it was chosen to be used in the conducted study. By using structural equations, path analysis approximates the multiple regression analysis. However, path analysis definitely surpasses the regression analysis. It admits a more complex structure of relationship among variables. It includes the analysis of direct and indirect effects relating the variables, facilitating thereby the causal interpretation of relationship. Moreover, this method does not depend on the order in which variables are input to the model – is free from the significance hierarchy of variables. In path analysis, the selection of variables for the model is not necessary. Only when a collinearity exists between independent variables, is it necessary to remove some of the variables from the model.

In path analysis, theoretically justified structure of causal relationship is a subject to verification for a given set of variables. Therefore, four basic assumptions are mentioned: (1) relationship among variables input to the model are causal, linear (or approximated to linearity) and additive (variables are not correlated); (2) residual variables are not correlated with one another, nor with the variables preceding them in the model; (3) the correlation of independent

Table 2. Types of variables included in path analysis

Independent variables			
R&D financial resources	X ₁	Clan culture	K ₁
Communication	X ₂	Adhocracy culture	K ₂
Managerial attitude toward change	X ₃	Market culture	K ₃
Specialization	X ₄	Hierarchy culture	K ₄
Functional differentiation	X ₅	Transformational leadership	P ₁
Vertical differentiation	X ₆	Transactional leadership	P ₂
Formalization	X ₇	Laissez-faire leadership	P ₃
Centralization	X ₈	Managerial age	W
Administrative intensity	X ₉	Managerial tenure	SP
Innovative collaboration	X ₁₀	Managerial professional experience	DZ
Dependent variables			
Product innovations	Y _{1,A}	Perceived effectiveness	Z
Process innovations	Y _{1,B}	Return on sales	ROS
Technical innovations	Y _{1,C}	Return on assets	ROA
Administrative innovations	Y _{1,D}		

variables is treated as “given,” not resulting from a common cause, and remains beyond an analysis; (4) the variables are measured on the interval scale (Gaull and Machowski 1987: 89). However, in spite of waiving some of the assumptions, the path model remains “solvable.” Table 2 presents the independent and dependent variables included in path analysis.

Most of the independent variables (X_2 , X_3 , X_7 , X_8 , X_{10} , P_1 , P_2 , P_3) were measured on a 7-point Likert scale, from 1 – “strongly disagree” to 7 – “strongly agree.” R&D financial resources were measured as annual estimated outlays on innovation activity – respondents were asked to estimate financial data in real units (PLN). The communication, as described by, e.g.: holding formal meetings of employees from different units, frequent communication between units, clearly defined project priorities, and a clearly defined hierarchy between managers involved in innovation projects, was assessed with 8 items (Koberg, Detienne and Heppard 2003: 21–45). To examine organizational culture, the OCAI (Organizational Culture Assessment Instrument) tool was employed for operationalization of four dominant culture types – hierarchy, market, clan and adhocracy (Cameron and Quinn 2003: 30–32, 139). Due to the fact that one of the most important factors of creating innovation culture is a pro-innovation attitude of managers, the questionnaire included also 5 items concerning the managerial attitude toward change (Hage and Dewar 1973: 279–290).

Items of the Multifactor Leadership Questionnaire (MLQ) Form 5X (Bass and Avolio, 1991) were included in measuring transformational, transactional leadership as well as laissez-faire leadership. Transformational leadership was assessed with 19 items (connected with five dimensions of this style of leadership: attributed charisma, idealized influence, inspirational motivation, intellectual stimulation, and individual consideration), whereas transactional leadership was assessed with 17 items (connected with three dimensions of transactional leadership: contingent reward and active or passive management-by-exception). Laissez-faire leadership was assessed with 5 items.

Managerial tenure represents the length of service that managers have with an organization, and was measured by the number of years an organization has employed a manager for. Managerial professional experience reflects the experience that managers have with an organization and it was measured by one dichotomous question on whether respondent has the experience or has not.

Specialization reflects high levels of substantive skills and education of employees and was measured by the ratio of professional and technical employees (specialists) to total employees in an organization (Collins, Hage and Hull 1988: 512–543). Functional differentiation was measured by the total number of units below the chief executive level. Vertical differentiation was measured by the number of levels below the chief executive level. Administrative intensity was measured by the ratio of managers to total employees in an organization (Damanpour 1991: 555–590). The index of formalization was based on: (1) job

codification and rules, and (2) rule observation. It was assessed with 7 items that reflect the degree of freedom available to organizational members as they pursue their functions and responsibilities versus the extent of rules that precisely define their activities (Hage and Dewar 1973: 279–290). Centralization was measured by the degree of organizational members' participation in decision-making (Hage and Dewar 1973: 279–290). Examples of questions are “I usually participate in the decision to hire new staff” and “I usually participate in decisions on the adoption of new programs.” All 4 items were measured on a 7-point Likert scale, from 1 – “strongly disagree” to 7 – “strongly agree.” Innovative collaboration was operationalized as the firm collaboration intensity with external parties including customers, suppliers, R&D institutes, experts, and competitors (Lee 2009: 18–19).

Dependent variables in this study were type of innovation and organizational performance. Product innovations are new products or services introduced to meet an external user or market need. Process innovation are new elements introduced into an organization's production or service operations – input materials, task specifications, work and information flow mechanisms and equipment used to produce a product or render a service. The distinction between technical and administrative innovations is important because it relates to a more general distinction between social structure and technology. Technical innovation relate to basic work activities and concern either product or process. Such innovations pertain to products, services and production process technology. Administrative innovations involve organizational structure and administrative processes; they are related to management (Damanpour 1991: 555–590). Three measures of organizational performance were used: return on assets and return on sales as objective measures of financial performance and a subjective executive rating of effectiveness. The executive rating of effectiveness was collected through the survey questionnaire. Respondents were asked to evaluate the overall effectiveness of their organization based on factors such as growth in sales, growth in market share, growth in employees, growth in profitability, return on equity, return on total assets, profit margin on sales and the ability to fund growth from profits as compared with main rival, on a 7-point Likert scale (low = 1; high = 7).

4. Data collection

Data for the study were collected by using a questionnaire survey, a part of a wide questionnaire survey conducted within the research grant No. N N115 257434, entitled “Determinants of the enterprises innovation in the industrial area – by example of the Silesian Voivodeship.” Two surveying methods were

adopted: Computer Assisted Telephone Interview (CATI) and Paper And Pencil Interview (PAPI). All data were collected from January to June 2010. Complete data sets were received only from 219 Silesian companies, which makes 4% of 5,177 companies asked to fill in the questionnaire. Such a low level of a response (using the CATI technique – 3%, using the PAPI technique – 29%) resulted from a long duration of an interview, and in case of enquiries related to financial issues, from the respondents' reluctance to reveal such information, and too detailed data required.

A sample of 219 Polish companies from the Silesia Region (with at least 20 full-time employees) was used in order to empirically test the theoretical model. A three-part questionnaire was developed (one part for the employees and two parts for their leaders). The first and the second part of the questionnaire were directed to CEO or another high-ranking executives. The first part of the questionnaire was related to demographic information and the second one to issues concerning organizational determinants of innovations. The final section of the questionnaire drew on construct used in the past studies on leadership (Bass, Avolio, Jung and Berson 2003: 207–218). In this part of the questionnaire respondents rated their CEO. Respondents were ensured of the confidentiality and offered a summary of the results.

The scope of the research carried out included the following sectors of the business activity: biotechnology, power industry, environmental protection, IT, materials processing and production, transport infrastructure as well as medical technologies. The choice of the above-mentioned sectors was imposed by the need for comparison of the results obtained with those of the questionnaire survey conducted within the project entitled: "Priority technologies for sustainable development of the Silesian Voivodeship" (The technological foresight of the Silesian Voivodeship), in the period of November-December 2007. A comparison between a foresight population and the sample used in the empirical analysis is presented in Table 3.

Table 3. A comparison between foresight population and the sample used in the empirical analysis

Sectors		Foresight population			Selected sample		
		number	accumulate number	%	number	accumulate number	%
A.	Biotechnology	23	23	9.1	25	25	11.4
B.	Power industry	35	58	13.8	16	41	7.3
C.	Environmental protection	12	70	4.7	41	82	18.7
D.	IT	47	117	18.6	46	128	21.0
E.	Materials processing and production	82	199	32.4	38	166	17.4
F.	Transport infrastructure	24	223	9.5	47	213	21.5
G.	Medical technologies	30	253	11.9	6	219	2.7
Total		253	253	100.0	219	219	100.0

A non-response bias was tested in order to validate the sample's representativeness. In particular, differences between respondents and non-respondents were examined. T-tests indicated that there were no significant differences based on the number of full-time employees. Therefore, a non-response bias did not seem to pose a problem to the study.

5. Results

Due to the high correlation coefficients among independent variables, the preliminary reduction of their number was necessary. For this purpose, the *a posteriori* variable elimination procedure was used. Finally, those variables were included in the model, whose removal from the model would have significantly increased the residual variance at a significance level of 0.05. The only exception were variables describing the type of organizational culture and variables describing the respondents' age. These were eliminated with a whole group, if removing each of them would not increase the residual variance. Tables 4 and 5 present the values of F-statistics and the critical values of observed probabilities.

Table 4. Values of F-statistics and observed probability as obtained by elimination of variables following the *a posteriori* procedure

Variable	F-statistic	Probability	Variable	F-statistic	Probability
1	2	3	4	5	6
Product innovations			Process innovations		
K ₂	259.577	0.000	K ₂	229.245	0.000
X ₄	100.963	0.000	P ₂	86.170	0.000
P ₂	97.848	0.000	X ₄	80.746	0.000
P ₁	92.158	0.000	P ₁	74.988	0.000
X ₉	70.681	0.000	X ₉	62.159	0.000
X ₂	69.834	0.000	X ₂	61.225	0.000
X ₁₀	68.482	0.000	K ₄	60.896	0.000
K ₄	66.218	0.000	X ₁₀	50.387	0.000
X ₃	51.195	0.000	X ₃	46.975	0.000
X ₇	34.764	0.000	X ₇	30.231	0.000
X ₅	32.598	0.000	X ₅	28.669	0.000

Table 4 continued

1	2	3	4	5	6
X ₁	28.785	0.000	K ₃	25.425	0.000
K ₃	21.240	0.000	X ₁	21.826	0.000
K ₁	14.235	0.000	K ₁	10.920	0.001
P ₃	6.856	0.000	P ₃	6.813	0.000
X₆	3.467	0.064	X₆	2.906	0.090
X₈	1.627	0.129	X₈	1.795	0.090
W	1.217	0.271	W	1.787	0.183
SP	0.821	0.619	SP	0.738	0.702
DZ	0.312	0.577	DZ	0.272	0.602
Technical innovations			Administrative innovations		
K ₂	208.193	0.000	K ₂	151.322	0.000
K ₄	65.329	0.000	X ₉	39.392	0.000
P ₂	59.471	0.000	P ₂	35.352	0.000
X ₄	57.642	0.000	P ₁	34.573	0.000
X ₉	54.637	0.000	X ₄	33.969	0.000
P ₁	52.891	0.000	K ₄	33.159	0.000
X ₂	47.496	0.000	X ₂	30.918	0.000
X ₁₀	45.908	0.000	X ₁₀	24.774	0.000
X ₃	37.038	0.000	X ₅	23.715	0.000
X ₅	28.699	0.000	X ₃	20.915	0.000
X ₇	26.203	0.000	X ₇	20.010	0.000
K ₃	20.302	0.000	K ₃	17.057	0.000
X ₁	19.826	0.000	K ₁	14.309	0.000
K ₁	10.416	0.001	X ₁	10.118	0.000
P ₃	5.872	0.000	P ₃	7.956	0.000
X₆	3.280	0.072	X₆	2.936	0.088
X₈	1.347	0.230	X₈	1.496	0.170
W	0.900	0.344	SP	1.145	0.328
SP	0.552	0.866	W	1.022	0.313
DZ	0.518	0.473	DZ	0.405	0.525

Table 5. Values of F-statistics and observed probability as obtained by elimination of variables following the *a posteriori* procedure

Perceived effectiveness			Return on sales			Return on assets		
Variable	F-statistic	Probability	Variable	F-statistic	Probability	Variable	F-statistic	Probability
K ₂	366.208	0.000	X ₄	315.769	0.000	K ₃	118.792	0.000
X ₄	365.662	0.000	K ₂	180.139	0.000	K ₂	107.751	0.000
P ₁	278.551	0.000	X ₂	158.587	0.000	X ₄	69.002	0.000
P ₂	273.620	0.000	K ₃	144.506	0.000	X ₂	49.585	0.000
Y _{1,A}	210.926	0.000	P ₁	113.601	0.000	P ₁	44.106	0.000
X ₁₀	206.625	0.000	P ₂	99.009	0.000	P ₂	41.344	0.000
X ₂	173.133	0.000	X ₁	65.787	0.000	X ₃	36.238	0.000
K ₄	153.399	0.000	X ₃	65.314	0.000	X ₁	31.470	0.000
X ₃	145.731	0.000	Y _{1,A}	39.546	0.000	Y _{1,A}	25.510	0.000
X ₉	142.344	0.000	P ₃	38.568	0.000	P ₃	25.010	0.000
Y _{1,B}	121.533	0.000	X ₁₀	34.643	0.000	X ₁₀	23.161	0.000
X ₁	102.089	0.000	X ₉	33.535	0.000	X ₉	20.328	0.000
Y _{1,C}	85.650	0.000	Y _{1,B}	25.743	0.000	Y _{1,B}	16.495	0.000
X ₇	53.680	0.000	Y _{1,C}	18.153	0.000	X ₆	14.518	0.000
Y _{1,D}	39.299	0.000	X ₅	16.309	0.000	Y _{1,C}	12.362	0.000
K ₃	38.468	0.000	X ₇	11.891	0.000	X ₇	10.230	0.000
X ₅	32.217	0.000	K ₄	9.012	0.003	K ₄	8.296	0.005
P ₃	5.235	0.000	Y _{1,D}	8.892	0.000	Y _{1,D}	5.497	0.000
K ₁	3.933	0.049	K ₁	7.993	0.006	K ₁	4.131	0.044
X ₆	3.403	0.066	W	4.948	0.028	W	3.926	0.050
W	2.930	0.088	X ₈	1.482	0.180	X ₈	2.688	0.063
X ₈	1.473	0.178	SP	1.273	0.249	SP	2.184	0.140
SP	0.312	0.983	DZ	0.067	0.796	DZ	0.403	0.527
DZ	0.303	0.583	X ₆	0.062	0.803	X ₅	0.069	0.793

In all equations, except for the ROA describing equation, the following variables were eliminated: vertical differentiation (X₆), centralization (X₈), managerial tenure (SP), professional experience (DZ) and the variable denoting the age category. In the ROA describing equation, instead of the X₆ variable (vertical differentiation), the X₅ variable (functional differentiation) was removed. Due to the fact that the multidimensional distribution of residues does not match the normal distribution, it is impossible to infer about the significance of the estimated parameters. For interpretation of the causal relationship it was assumed that the parameter estimation was characterized by high reliability if the quotient of estimated parameter value by the parameter estimation error was greater, in terms of the modulus, than 3.0 (i.e. the parameter estimation error is three times less than the parameter value).¹ Moreover, it was assumed that the

¹ Based on the Chernyshev inequality.

quotient values greater than 2.0 indicated a moderate reliability of estimation, while less than two – low reliability. Tables 6 and 7 provide the results of path analysis.

Table 6. Path analysis; dependent variable: type of innovations

Variable	Par.	B. Std.	Par./B. std	Variable	Par.	B. Std.	Par./B. std
Product innovations				Process innovations			
X₁	0.019	0.008	2.473	X₁	0.013	0.006	2.116
X ₂	0.026	0.069	0.372	X ₂	0.065	0.054	1.203
X ₃	-0.084	0.136	-0.614	X ₃	-0.016	0.105	-0.155
X₄	0.088	0.04	2.202	X₄	0.046	0.031	1.496
X ₅	-0.189	0.626	-0.302	X ₅	-0.366	0.486	-0.754
X ₇	-0.069	0.042	-1.638	X ₇	-0.04	0.032	-1.242
X ₉	0.471	8.64	0.054	X ₉	2.646	6.71	0.394
X ₁₀	0.325	0.199	1.634	X ₁₀	0.021	0.155	0.133
P ₁	1.502	0.935	1.606	P ₁	1.505	0.725	2.077
P₂	-3.376	0.805	-4.196	P₂	-2.963	0.624	-4.745
P ₃	0.074	0.466	0.158	P ₃	0.12	0.363	0.331
K ₁	-13.534	8.321	-1.626	K ₁	-10.366	5.808	-1.785
K ₂	-17.183	9.922	-1.732	K ₂	-13.362	7.274	-1.837
K ₃	-8.001	4.963	-1.612	K ₃	-6.884	3.533	-1.948
Free term	17.986	6.982	2.576	Free term	14.369	5.421	2.651
Residual deviation	1.130			Residual deviation	1.100		
Technical innovations				Administrative innovations			
X₁	0.01	0.004	2.523	X₁	0.005	0.004	1.441
X ₂	0.015	0.036	0.416	X ₂	0.049	0.032	1.508
X ₃	0.018	0.071	0.252	X ₃	-0.043	0.064	-0.681
X ₄	0.036	0.021	1.716	X ₄	0.013	0.019	0.684
X ₅	-0.13	0.327	-0.396	X ₅	-0.037	0.294	-0.125
X ₇	-0.021	0.022	-0.975	X ₇	-0.016	0.02	-0.806
X ₉	-2.518	4.51	-0.558	X ₉	-4.462	4.058	-1.100
X ₁₀	0.154	0.103	1.492	X ₁₀	-0.025	0.093	-0.264
P ₁	0.213	0.488	0.437	P ₁	0.979	0.437	2.239
P₂	-0.979	0.419	-2.337	P₂	-0.889	0.377	-2.356
P ₃	0.032	0.243	0.132	P ₃	-0.231	0.22	-1.052
K ₁	-4.719	2.714	-1.739	K ₁	-5.155	3.096	-1.665
K ₂	-6.188	3.929	-1.575	K ₂	-6.795	3.979	-1.708
K ₃	-2.936	2.025	-1.450	K ₃	-3.019	1.93	-1.564
Free term	5.72	3.637	1.573	Free term	5.298	3.273	1.619
Residual deviation	1.059			Residual deviation	1.048		

Table 7. Path analysis; dependent variable: organizational performance

Perceived effectiveness				Return on sales			Return on assets				
Variable	Par.	B. Std.	Par./B. Std.	Variable	Par.	B. Std.	Par./B. Std.	Variable	Par.	B. Std.	Par./B. Std.
$Y_{1,A}$	0.107	0.105	1.016	$Y_{1,A}$	0.001113	0.000489	2.276	$Y_{1,A}$	-0.000517	0.001197	-0.432
$Y_{1,B}$	0.126	0.119	1.059	$Y_{1,B}$	0.000016	0.000536	0.030	$Y_{1,B}$	-0.000597	0.001309	-0.456
$Y_{1,C}$	0.008	0.159	0.050	$Y_{1,C}$	0.000418	0.000783	0.534	$Y_{1,C}$	0.002122	0.001917	1.107
$Y_{1,D}$	-0.487	0.149	-3.272	$Y_{1,D}$	-0.001181	0.000653	-1.807	$Y_{1,D}$	-0.003145	0.001597	-1.969
X_1	0.019	0.007	2.887	X_1	-0.000011	0.000027	-0.397	X_1	-0.000061	0.000065	-0.942
X_4	0.094	0.031	3.009	X_4	-0.000266	0.000144	-1.843	X_4	-0.000205	0.000354	-0.578
X_5	-0.691	0.488	-1.416	X_5	0.001941	0.002282	0.851	X_6	-0.035619	0.003964	-8.986
X_7	-0.123	0.032	-3.820	X_7	-0.000513	0.000162	-3.166	X_7	-0.001379	0.000395	-3.489
X_9	-7.433	6.728	-1.105	X_9	-0.028572	0.029952	-0.954	X_9	0.007473	0.073380	0.102
X_3	0.05	0.105	0.475	X_3	0.001190	0.000568	2.093	X_3	0.002599	0.001390	1.870
X_2	0.096	0.054	1.770	X_2	0.000932	0.000418	2.228	X_2	0.001392	0.001013	1.373
X_{10}	0.315	0.157	2.009	X_{10}	0.000369	0.000801	0.460	X_{10}	-0.000291	0.001964	-0.148
P_1	2.878	0.736	3.908	P_1	0.001932	0.004063	0.475	P_1	0.007511	0.009958	0.754
P_2	-0.22	0.656	-0.335	P_2	-0.002128	0.003079	-0.691	P_2	-0.009683	0.007533	-1.285
P_3	0.254	0.365	0.694	P_3	-0.015641	0.001926	-8.121	P_3	-0.033900	0.004725	-7.175
K_1	-2.676	1.982	-1.350	K_1	0.019120	0.011454	1.669	K_1	0.045939	0.028039	1.638
K_2	-1.667	2.507	-0.665	K_2	0.022097	0.013595	1.625	K_2	0.058585	0.033285	1.760
K_3	-4.442	1.604	-2.769	K_3	-0.009195	0.009627	-0.955	K_3	-0.007050	0.023556	-0.299
Free term	26.888	5.467	4.918	Free term	0.043645	0.027907	1.564	Free term	0.115748	0.068193	1.697
Residual deviation	1.101			Residual deviation	0.010			Residual deviation	0.024		

Par. – estimated parameter value, B. Std. – standard parameter error (estimation error), Par./B. Std. – quotient of the parameter value by the parameter estimation error.

From the data in Tables 6 and 7 we can conclude about the direct and indirect relationship between particular determinants and the level of innovation and effectiveness.

In the equation describing product innovations, the greatest (reliable) influence have: (1) R&D financial resources (X_1), specialization (X_4), and transactional leadership (P_2). The increase in financial resources (X_1) by a unit results in an increase in the number of product innovations by 0.019. The increase in specialization (X_4) by 1% causes an increase in the number of product innovations by 0.088. Transactional leadership results in a decline in the number of product innovations (the increase in P_2 by a scale unit causes a decrease of $Y_{1,A}$ by 3.376, assuming that the values of the remaining variables do not change).

In the equation describing process innovations, the determinants for which the greatest (reliable) influence was noted, are: (1) R&D financial resources (X_1), transformational (P_1), and transactional leadership (P_2). The increase in financial resources (X_1) by a unit results in an increase in the number of process innovations by 0.013. Transformational leadership causes an increase in the number of process innovations (the increase in P_1 by a scale unit causes an increase in $Y_{1,B}$ by 1.505). Transactional leadership has the effect of decreasing the number of process innovations (the increase in P_2 by a scale unit causes a decrease in the number of process innovations by 2.963, assuming that the values of the remaining variables remain unchanged).

R&D financial resources (X_1), and transactional leadership (P_2) influence (in a reliable manner) technical innovations. The increase in financial resources (X_1) by a unit results in an increase in the number of technical innovations by 0.01. Transactional leadership has the effect of decreasing the number of technical innovations by 0.979 (assuming that the values of the remaining variables do not change).

Administrative innovations are most (reliably) affected only by leadership styles. Transformational leadership increases the number of administrative innovations by 0.979. Transactional leadership causes a decline in the number of process innovations by 0.880, assuming that the values of the remaining variables do not change.

For perceived effectiveness, variables of the greatest (reliable) influence are: administrative innovations ($Y_{1,D}$), R&D financial resources (X_1), specialization (X_4), formalization (X_7), innovative collaboration (X_{10}), transformational leadership (P_1), and market culture (K_3). The increase in the number of administrative innovations by a unit causes a decrease in perceived effectiveness by 0.487 scale points. The increase in R&D financial resources (X_1) by a unit results in an increase in perceived effectiveness by 0.019 scale points. The increase in specialization by 1% results in an increase in perceived effectiveness by 0.094 scale points. The increase of formalization by a scale

unit causes a decline in perceived effectiveness by 0.123 scale points. The increase of innovative collaboration (X_{10}) by a scale unit causes a decline in perceived effectiveness by 0.315 scale points. Transformational leadership causes an increase in perceived effectiveness by 2.878 scale points. In the case of market culture (K_3), the number of innovations is less by 4.442 compared to hierarchy culture.

ROS is most (reliably) influenced by: product innovations ($Y_{1,A}$), communication (X_2), managerial attitude toward change (X_3), formalization (X_7), and laissez-faire (P_3). The increase in the number of product innovations ($Y_{1,A}$) by a unit causes an increase in ROS by 0.0011. The increase in communication (X_2) by one scale point results in an increase in ROS by 0.00093. Increasing managerial attitude toward change (X_3) by one scale point increases ROS by 0.0012. The increase in formalization (X_7) by one scale point causes a decrease in ROS by 0.00051. The non-leadership behaviours of top managers (P_3) result in a drop in the ROS indicator by 0.0156, assuming that the values of the remaining variables do not change.

In the case of ROA indicator, the determinants for which the greatest (reliable) influence was noted, are: vertical differentiation (X_6), formalization (X_7), and laissez-faire (P_3). The increase in vertical differentiation (X_6) causes a decrease in ROA by 0.035. Increasing formalization (X_7) by one scale point decreases ROA by 0.0014. The non-leadership behaviours of top managers (P_3) result in a drop in the ROA indicator by 0.034, assuming that the values of the remaining variables do not change.

A graphical representation of significant (reliable) relationship between particular determinants, innovation and effectiveness is shown in Figure 1.

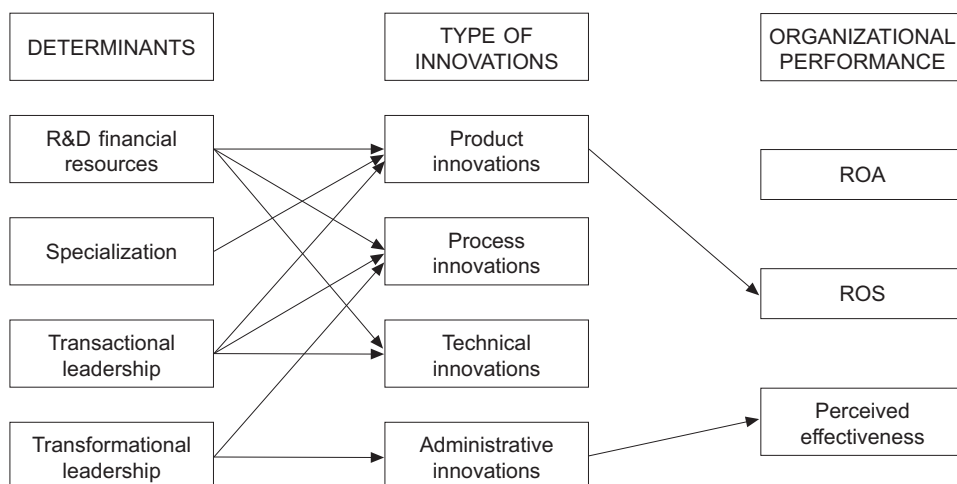


Figure 1. Significant paths

Based on conducted path analysis it can be stated that:

- R&D financial resources, specialization, and transactional leadership mediate effectiveness (as measured by the ROS indicator), and this path passes through the variable $Y_{I,A}$ (the number of product innovations);
- Leadership styles mediate perceived effectiveness, and this path passes through the variable $Y_{I,D}$ (the number of administrative innovations).

6. Conclusions

The study was focused on linkages between a great variety of determinants, four types of innovation and organizational performance. The findings of the study highlight that R&D financial resources, specialization, and different leadership styles have a significant impact on two measures of firm's performance.

When a financial measure such as ROS is taken into consideration, R&D financial resources, and specialization positively affect product innovation, whereas transactional leadership has a negative impact on product innovation. Higher R&D expenditures favour implementation of product innovation, since more resources become allocated to research. Also, a great number of innovative employees (experts) found in an organization, stimulates product innovation. The qualified employees are the essential source of new knowledge, the use of which leads to development of new products. A greater variety of specialists provides a more diversified knowledge base and increases cross-fertilization of ideas, both of which result in more product innovation. Transactional leaders are primarily concerned with gaining compliance from followers by agreeing upon the conditions and rewards that will follow the fulfillment of certain requirements. Hence this type of leadership does not stimulate the intrinsic motivation to take innovative actions. Subordinates are creative in order to gain benefits by the contractual agreement with a leader. Sometimes, an individual innovation may arise as a result of such activities, but generally transactional leadership neither stimulates product innovation nor increases a firm's financial returns.

When a executives' positive perceptions of firm performance is taken into consideration, different leadership styles have a significant impact on administrative innovations. Effective leaders stimulate employees' creativity and their opening to new knowledge acquired from internal as well as external sources. It has been acknowledged that administrative innovation is fostered in organizations which enhance employee autonomy, allow them to easily express their opinions and devise interfunctional cooperation.

Transactional leadership is directed at fulfilment of the contract with the subordinates and to exact monitoring of the innovation process, in order to prevent any deviations from proven methods. Hence, the findings of the study are not surprising, as transactional leadership emphasizes conformity with established routines and practices and would tend to discourage creative solutions. Transformational leadership assumes a strong connection between a leader and followers. It means that leader motivates subordinates to make increased efforts, by stimulating followers' emotions towards their work. Innovation-oriented companies assign the resources specifically to new ideas, support creative employees regardless of their work position, as well as reduce the bureaucracy related to the approval procedure preceding the implementation of an idea in practice. In short, such companies provide sufficient resources to fully develop and maintain product innovation on a higher level than the competitors.

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The implementation of corporate social responsibility as an innovative concept applied in the metallurgical industry

Abstract: In the era of globalization, many authors argue that social, economic and political problems are merged into one single unit and so are their solutions. Corporate social responsibility is an essential part of effective management in an affluent society. Corporate social responsibility is not only a complementary management tool, but also an important component of corporate culture and management. It is a commitment of the company to improve the community's well-being through voluntary business practices and contributions of corporate resources. The paper deals with CSR activities and their application in business. The aim of the paper is to identify the level of implementation of this concept in the metallurgical industry in Slovakia on the basis of theoretical assumptions and the current state of corporate social responsibility.

Key words: corporate social responsibility, enterprises of metallurgical industry, implementation, stakeholders

JEL codes: M14

1. Introduction

Corporate social responsibility is a management concept of growing importance that has been widely accepted and applied in everyday operation of a number of businesses. In Slovakia corporate social responsibility is mostly known in large companies who as daughters of multinational companies have taken over the strategies to implement socially responsible business from their

parent companies and these strategies are models to carry out all their activities in accordance with the principles of socially responsible business. This is the main reason why the scope of activities of socially responsible business can be examined mainly in large companies with a foreign majority stake that have their concepts of responsible business not only worked out, but also implemented in their corporate strategies. Corporate social responsibility can be examined from the point of view of different disciplines and aspects. In our paper we deal with the issues of socially responsible business according to its individual concepts in the economic, social and environmental areas with the application to the metallurgical industry.

2. The current state of the issue

Socially responsible business is a voluntary integration of social and ecological interests into everyday running of the business and the interaction with its stakeholders (Green Book 2001).

Kotler (2005: 3–4) sees corporate social responsibility as a commitment to improving the welfare of the community through voluntary business practices and contributions from the company's resources.

The key element of these definitions is the word “voluntary” as it refers to the voluntary commitment of businesses to realize their activities with observing socially and ecologically responsible procedures.

Voluntary practices in relation to socially responsible business were also a topic for Hanuláková (1997: 41) who points to two extremes of the view on social responsibility. The first point of view is based on the “laissez-faire” approach stressing the advantages of free competition underpinning the system of private property and complete freedom of action in all areas of economic activity without state interference. The other point of view maintains that the burden of social responsibility rests solely on the state.

Trnková (2004: 12) also states that, on the one hand, international organizations representing the interests of socially responsible business insist on the willingness of a socially responsible business, and on the other hand, influential non-government organizations enforce a mandatory and enforceable legal framework of socially responsible business. The proponents of a mandatory legal framework of socially responsible business consider the greatest threat of a reduction of responsible business to corporate public relations, where businesses submit reports only on those good things and conceal the bad ones.

In our paper we examine and assess the activities of voluntary character that go beyond the legislative framework and that are a contribution to the im-

provement of service quality to their employees, local community and the whole society. We have identified the activities from annual reports on socially responsible business that are publicly published documents.

In terms of corporate social responsibility the activities of each business are evaluated in three lines: the economy (Profit), the environment (Planet) and society (People), i.e. in a so-called Triple Bottom Line or 3P (Marková 2011).

Profit is an economic dimension referring to the value creation by means of the business's products and creating products and services. Financial rate of return reflects customer appreciation and the efficiency power factor. Profit motive is a source of long-term financial base for the business continuity. People are a social dimension covering a wide range of aspects affecting people inside and outside the organization, such as interpersonal relationships, safety and other. Planet is an ecological dimension referring to the impact of the business on the environment (Majdúchová 2007).

From this point of view a business functions on a Triple Bottom Line – it focuses not only on the economic growth, but also on the social and environmental consequences of its activities.

Responsible entrepreneurship in the economic area is monitoring and improving processes that a business contributes to the economic environment and to the effort to minimize a potentially negative impact of its activities in this area. These include code of ethics of business, relationships with shareholders, consumers, suppliers, advertising and intellectual property protection. In the social area corporate responsibility is reflected in monitoring and minimizing the negative effects of business activities on the social system. Examples of responsible behaviour in this area include health and safety of employees, compliance with equal opportunities policy, balancing work and personal lives of employees, corporate philanthropy, lobbying compliance, fight against corruption and increase of the quality of life. In the environmental area, corporate responsibility is reflected by monitoring and reducing the negative impacts of the business on the environment. Among the most important issues are processes such as recycling, using organic products, compliance with standards ISO 14000 and EMAS, protecting natural resources and use of alternative energy sources (Trnková 2004).

2.1. Bodies of socially responsible business

The aim of corporate social responsibility is to create conditions for sustainable growth in different areas and also to take over responsibility in these areas. The priority is to establish and develop sustainable relationships with all stake-

holders – shareholders, investors, employees, customers, suppliers, institutions, society and future generations.

The bodies of socially responsible business are commonly called stakeholders (Bunčák et al. 2005, Čierna 2009, Kašparová 2007, Lesáková 2007, Prskavcová 2007, Raškovská 2010, Trnková 2004, Zelený 2007). The authors also agree with the opinion that stakeholders include all persons, groups or organizations having an impact on the running of the company, or their activities have a reverse effect on the company, and they are involved in the running of the company. In the paper we substitute the term “stakeholders” with the expression “bodies involved.” On this account we consider as the bodies involved: owners, employees, customers, suppliers, competitors, government and non-governmental organizations (NGOs).

Each body involved has some influence on entrepreneurship. Owners and shareholders have an interest in the growth and prosperity of the business, employees evaluate the working conditions, consumers are interested in the quality of products and services, government has an interest to reduce unemployment and it also creates a business environment and NGOs and communities monitor the behaviour of the business in the place where it runs its activities (Bunčák et al. 2005: 9).

Trnková (2004) and Bunčák (2005) state that smooth operation and long-term results can be guaranteed only when the corporate strategy contains tools to identify and adequately satisfy the needs of not only shareholders, but also all groups involved.

Freeman's stakeholder concept (1984) considerably helped to identify the groups involved. It identified the most significant groups that influence the business or vice versa that the business influences. In the application of corporate social responsibility in practice it determines what is necessary to pay attention to and to whom the business should be responsible (Kašparová 2007).

Marasová (2008: 109) states that the identification of a party involved is based on three attributes: the strength of the business's impact on the company, the legitimacy of their relations with the business and urgency to meet its business needs.

In general, the involvement of interest groups in the process of implementation of socially responsible business is on a low level in Slovakia (Kriglerová et al. 2007). The most common reason is the fact that the dialogue with the interest groups is going ad hoc. As a consequence these activities are of remedial rather than preventive nature. Businesses themselves initiate the dialogue rarely. The problem is an inadequately identified range of interest groups. Businesses most frequently communicate only with business partners, suppliers or employees. In case a business has prepared a strategy of corporate social responsibility, it usually also has a strategy of identification and communication with interest groups, which means it incorporates them in its activities.

Based on the definitions mentioned above we consider interest parties individuals, groups or organizations that create the surroundings of the business, directly or indirectly affect the business or are influenced by its activities. As mentioned above, the bodies involved are owners, employees, customers, suppliers, competitors, government and non-government organizations.

2.2. The implementation of corporate social responsibility

We have already stated in the introduction that a more in-depth examination of corporate social responsibility in Slovakia is only possible in the environment of multinational companies who have taken over the worked out concepts with instructions for their implementation in the conditions of their daughter companies in the Slovak Republic.

Bunčák (2005: 22) maintains that generating profits for the benefit of owners and shareholders is the primary and legitimate interest of enterprises. Then corporate social responsibility is an instrument for businesses to gain stability in the market and get anchored in the local environment, which helps them fulfill their primary goal. Corporate social responsibility is a contribution of businesses to the development of quality life of the inhabitants of Slovakia, which is affected by a combination of personal qualities of managers, strategic goals of foreign parent companies and global influences, and by the reaction to the environment created by the social policy of the government, effort to communicate with selected target groups, to enrich corporate culture and to contribute to the satisfaction of employees.

The implementation of corporate social responsibility is a systemic, externally verifiable process that ensures that businesses keep their economic, ethical, environmental, social and communal commitments. Businesses can use some of the norms relating to corporate social responsibility: ISO 26000 – *Spoločenská zodpovednosť podniku* (Corporate social responsibility); SA 8000 – *Sociálna zodpovednosť* (Social responsibility); 14001 – *Systém environmentálneho manažmentu* (System of environmental management and audit); EMAS – *Systém environmentálneho riadenia a auditu*; OHSAS 18001 – *Systém manažmentu bezpečnosti a ochrany zdravia pri práci* (System of management of health and safety at work).

At the end of this section it is necessary to state that so far there is no generally applied model of creation and implementation of the concept of corporate social responsibility in practice. This is the reason why we believe it is important to describe the most commonly used methods that can be adapted to the conditions of socially responsible business.

2.3. Management tools of implementation of corporate social responsibility

In general, it is possible to identify ten steps of implementation of corporate social responsibility in businesses: commitment, identification of key parties involved, naming of the company's core values and the determination of the principles of corporate social responsibility, assessment of the current state of implementation of corporate social responsibility, setting objectives and themes of corporate social responsibility, formulation of the action plan of implementation, implementation, monitoring – defining the indicators and methodology for tracking the success in promoting socially responsible business practices, reporting and adoption of measures to improve and complement the design of new strategies and indicators (Steinerová 2008).

There are a few managerial instruments for work with the concept of corporate social responsibility that were either derived from the classical methods or specially developed for the purposes of this concept. The reason for using managerial tools is in an effort to contribute to more efficient management, implementation, measurement and reporting on corporate social responsibility. An important factor is also corporate performance.

Lesáková (2004) considers efficiency in its wide meaning an interest of not only owners, but also other bodies involved, who are managers, employees, creditors, suppliers, customers, community and the state. In this case interest is understood in terms of creating a value (benefit) that the business brings to individual bodies involved.

The interest of a socially responsible business is to gain profit with respecting social and ecological goals. Profit as an economic goal is a primary goal without which the other goals could not be achieved.

Zelený (2007: 9) and Čierna (2008: 55) consider a model of corporate social responsibility the model of uniqueness (EFQM), which is a practical instrument used as a method of self-assessment, as a basis of a common language that supports sharing the best practice within the business. The essence of this model is to develop means to achieve the desired pre-set objectives of the organization. Zelený (2007: 9) gives other instruments of corporate social responsibility – an Implementation Guide for Canadian Business. According to this model the concept of corporate social responsibility is taken as a way of integration of social, environmental and economic aspects into the whole corporate culture strategy, management, decision-making processes and performance in a transparent and easy to assess way so that the business can improve its overall performance and at the same time have a good influence on the society around.

It is important to mention the norm ISO 26000 Guidance on Social Responsibility – ISO (International Organisation for Standardization). ISO 26000

is a norm whose main goal is to give businesses around the world instructions to improve their management and action based on key indicators of sustainable development in terms of general principles of social responsibility concept. This norm is based on the principles of known concepts (corporate social responsibility and triple bottom line). It identifies 6 different types of stakeholders – industry, government, employees, customers and consumers, non-government organizations and others (e.g. research and services).

2.4. Possibilities of assessment of corporate social responsibility

The increasing interest in corporate social responsibility brings also an increasing amount of different activities that businesses carry out in this area. This increase is accompanied also by instruments to measure, evaluate, improve and communicate the effects of businesses activities on society and the environment. They include general principles of responsible business, such as Global Compact and a variety of benchmarks, audits and management systems. These instruments are usually divided into four groups.

The first group represents general principles and codes of conduct that should be observed. These are principles containing generally accepted rules and methods for responsible business. They do not contain an obligation for the firm to undergo an external audit to assess its socially responsible practices and they do not require reporting on these activities.

The second group of tools consists of management systems and certificates. These are regulations to govern the management of business processes so that they correspond to a pre-set standard. In case the firm complies with such standards, it receives an official certificate.

Another group of instruments are indexes used by agencies dealing with socially responsible investment. They represent a number of criteria that can be a basis for creating a comparison index. Subsequently, based on such an index investment funds can choose socially responsible companies to invest in.

The last group of instruments represents rules to prepare reports of socially responsible businesses. These are rules of practices that firms should comply with when preparing annual reports. An example can be GRI directions (Slater 2004) that are most commonly used. These instruments have no ambition to define substantial environmental and social goals for companies, but they provide general rules to correctly and fairly assess the performance of the company and to communicate with stakeholders (Bunčák et al. 2005: 81). In the following part we analyse activities within socially responsible business and

evaluate the implementation of this concept into the company according to the guidelines of sustainable development of GRI.

3. The goal, material and methodology

The aim of this paper is to identify the level of implementation of the concept of corporate social responsibility in the metallurgical industry in Slovakia.

The theoretical basis was literature by national and foreign authors dealing with the issue of corporate social responsibility, business ethics and non-profit activities of companies. We also used publications dealing with the forms of socially responsible business in private companies and internet sources of foreign and national private organizations, NGOs, research institutions and universities.

In the analysis of corporate social responsibility in the metallurgical industry we used annual reports, reports on socially responsible business, promotion and information materials, media news on the activities of the researched companies and the information published on the websites of the companies. The sample consisted of companies operating in the metallurgical industry.

The object of research were companies in the metallurgical industry and corporate social responsibility.

The methods of research were chosen with regard to the object of research and the aim of the paper. In processing the theme we used literary and historical-logical method, which is a basis of processing the theoretical background of the theme. To examine the level of socially responsible business and the current state of applying individual concepts of socially responsible business in the research sample we used the method of analysis. The scientific method of abstraction was used in the selection of criteria to design the methodology and the graphic method is used to illustrate the outputs of our research.

According the available materials we divided the examined indicators into three groups: the economy, society and the environment. In each group we sub-divided the indicators according to interest groups. In the choice of indicators we followed the guidelines of the Global Reporting Initiative (GRI), which provides a uniform methodology to compile annual reports on socially responsible business (<http://www.globalreporting.org>).

Annual report can be defined as a publicly published document accessible to all partners of the company which provides a detailed overview of the position of the company and its activities in wider economic, environmental and social terms (Slater 2004: 24).

The following table presents the analysed indicators in the area of the economy. On the whole, there were stated 19 indicators in the economic area.

Table 1. Analysed indicators in the economic area

Name of index	Symbol	Interest group
Financial flows between the company and providers of capital	V1	owners
Long-term stability of the company	V2	
Alignment of activities with shareholders' values	V3	
Procedure for upgrading skills	Zam1	employees
Reasonable wages	Zam2	
Training and education	Zam 3	
Customer satisfaction	Zak1	customers
Product availability	Zak2	
Fair advertising	Zak3	
Compliance with agreed terms	D1	suppliers
Quality and price of supplied products	D2	
Abuse of power, satisfaction of partners	D3	
Respect for intellectual property protection	K1	competition
Respect for fair competition	K2	
Cartels	K3	
Subsidies, grants and tax reliefs	G1	government
Corporate philanthropy, donations to NGOs and local governments	MVO1	NGO
Investment in community programmes	MVO2	
Social dialogue	MVO3	

Source: Processed according to Bunčák (2005: 9).

The following table presents a list of indicators in the area of society. In this area there were determined 21 indicators.

Table 2. Analysed indicators in the area of society

Name of index	Symbol	Interest group
1	2	3
Influence of investment on development of human rights	V1	owners
Clearer assessment of annual reports	V2	
Transparent accounting	V3	
Health and safety of employees	Zam1	employees
Balancing work and personal life	Zam2	
Human rights and equal opportunities	Zam3	
Mobbing, sexual harassment	Zam4	
Health and safety of customers	Zak1	customers
Monitoring human rights	Zak2	
Protection of personal data	Zak3	

Table 2 continued

1	2	3
Bribery and corruption	D1	suppliers
Equal opportunities in the choice of supplier	D2	
Share of local suppliers	D3	
Compliance with codes of ethics	K1	competition
Contributions to political parties	G1	government
Bribery and corruption	G2	
Support to and management of corporate philanthropy	G3	
Development of human capital	MVO1	NGOs
Requalification of redundant employees	MVO2	
Development of infrastructure	MVO3	
Complaints of the public about breaking the rules of CSR	MVO4	

Source: Processed according to Bunčák (2005: 9).

The last 14 indicators were defined in the area of the environment.

Table 3. Analysed indicators in the area of the environment

Name of index	Symbol	Interest group
Environmental management	V1	owners
Assessment of the environmental performance of the company	V2	
Risk planning	V3	
Lowering energy and material resources	Zam1	employees
Knowledge of the appropriate use of products	Zak1	customers
Recycling of used products	Zak2	
Packaging	Zak3	
Promoting the protection of the environment	D1	suppliers
Share of suppliers complying with recognized international standards for the environment	D2	
Transport of semi-products, products and workers	D3	
Solution of the problems of the environment	K1	competition
Monitoring the effects on the environment	G1	government
Effect on the environment in the location of operation	MVO1	NGOs
Use of local renewable resources	MVO2	

Source: Processed according to Bunčák (2005: 9).

The degree of corporate social responsibility and performance of activities were assessed as follows: In case a business performed random activities within the monitored indicator, and/or only marginally, it gained 0.5 point. If a business performed systematic activities, but not within the concept of corporate

social responsibility, it gained 1 point. Businesses that performed activities within corporate social responsibility gained 1.5 points for particular indicators. The most progressive companies with a long-term tradition in this area with a systematic approach to activities of corporate social responsibility who reported on these activities each year gained 2 points. Then the values for individual interest groups were averaged for each business. The average value showed the degree of corporate social responsibility in the area and the interest group. The volume of performed activities was determined as a percentage of the total number of points. The detailed assessment of indicators in individual interest groups was subsequently averaged into an aggregated variable.

We analysed top 10 companies in the metallurgical industry. The division of the sample of companies is shown in the following table.

Table 4. Division of companies in the metallurgical industry according to size, capital and locality

Size of company			Capital		Locality within the SR		
small	medium	large	foreign c.	domestic c.	west	middle	east
0	1	9	5	5	3	4	3

Source: own.

From the total number of companies, 3 were located in the east of Slovakia, 4 in the middle, and 3 in the west of Slovakia. As for size, 9 companies had over 250 employees and 1 company was medium-sized. The metallurgical companies apply the principles of corporate social responsibility very differently.

4. The results and discussion

In our research we analysed the state and activities of metallurgical companies in the area of the economy, where the average value of activities for all interest groups was 57.8%, which is 219.5 points.

In the interest groups in the economic area the companies achieved the best results in the categories of owners, employees and customers. Lack of activity was recorded in the category of government. On average the group gained only 20%, 4 points in total. Similarly, the activities in the category of competition are on a low level (average percentage was 43.3%, 26 points in total), which is connected with the character of business and low elasticity of offer in the industry.

The highest values were reached in the group of customers and owners – 67.5%, 40.5 points. In the area of cooperation with NGOs the value was 54.2%, 32.5 points.

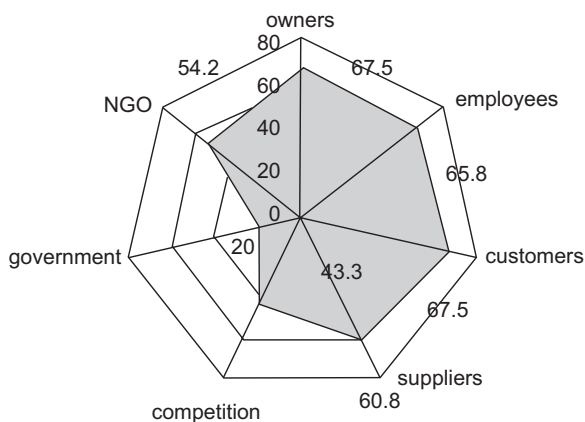


Figure 1. Average performance of indicators of corporate social responsibility in the area of the economy from the point of view of individual interest groups (%)

Source: own.

Corporate social responsibility in the area of society is performed at about 45.2%, with total number of points 190. The highest performance – 83.3%, was achieved by only 3 companies. Corporate social responsibility is applied only in the group suppliers and competition (average performance 55%). In the mentioned groups the companies report on their activities.

The results lead us to a conclusion that some selected companies do not behave responsibly in this area. Their activities are usually random, sometimes systematic, but not performed within the concept of corporate social responsibility.

The average performance of indicators in the area of society is shown in Figure 2.

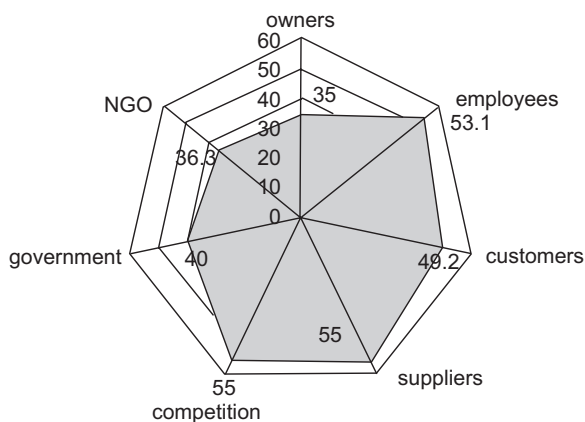


Figure 2. Average performance of indicators of corporate social responsibility in the area of society from the point of view of individual interest groups (%)

Source: own.

Metallurgical companies perform the most activities within corporate social responsibility in the group of suppliers, competitors and customers and the least activities in the group of owners and NGOs.

In the area of the environment corporate social responsibility is applied at 56.6% (in total 158.5 points). With regard to the nature of production the result is no surprise. This is a sector with a significant effect on the environment, where monitoring of the effects is mandatory.

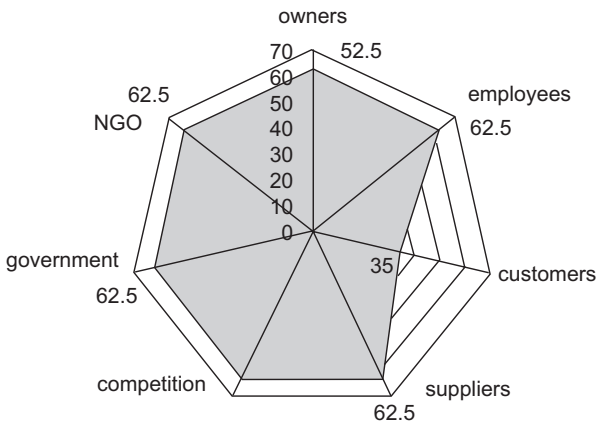


Figure 3. Average performance of indicators of corporate social responsibility in the area of the environment from the point of view of individual interest groups (%)

Source: own.

With the exception of customers the degree of performance of corporate social responsibility indicators was 62.5%. In the group of customers the companies recorded a value of 35%, which was 215 points in total.

5. Conclusions

Corporate social responsibility is not only a management tool, but it is an essential part of the character and culture of corporate management. The aim of corporate social responsibility is to create conditions for sustainable development in the areas of the economy, finance, society and the environment and to take over responsibility in these areas. The priority is to build sustainable relationships with all parties involved – shareholders, investors, employees, customers, suppliers, institutions, future generations and society. Definitions of corporate social responsibility offer a new look at the business, recognize its new roles, value and norms, which are a basis of its activities. They have their ethical, social, en-

vironmental as well as economic dimensions. Based on the analysis of the current degree of implementation of corporate social responsibility we can state that the economic dimension is dominating over the other dimensions. Despite the fact that several definitions stress the balance between the three levels of corporate social responsibility we consider the dominance of the economic one a necessity. Our claim can be substantiated also by Carroll quaternary pyramid of responsibility, where the author ascribed economic, legal, ethical and philanthropic responsibility the value of 4:3:2:1, respectively. We can expect new theoretical conclusions in the examined area in future and we take for granted that they will be broadly used and implemented in the Slovak Republic.

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Relational capabilities as effectiveness fundamentals in inter-firm cooperation

Abstract: The aim of this article is to broaden exploratory perspective of the problem of interorganizational cooperation. Economists often pay greater attention to economic (e.g. transaction costs, access to new capabilities) and market (e.g. increasing market power) factors underlying the decision to cooperate with other organizations and seem to neglect the so-called soft factors determining eventual success or failure of cooperation.

The article presents a theoretical study in which on the basis of a broad literature study, the author examines selected factors highly influencing the shape and efficiency of interfirm alliances, that are mentioned not only by economists but are subjects of sociological and psychological analyses as well.

Among all, the so-called relational capabilities may be of greatest importance. Partnering experience, social embeddedness, interorganizational trust, learning ability, as well as relational mechanisms may be considered as critical success factors in cooperative relationships. The author gives weight to non-economic aspects of management in cooperative relations, as this direction is often neglected in research on the subject of interorganizational collaboration.

Key words: business cooperation, relational capabilities

JEL codes: M10, M12, M14

1. Business cooperation – some definitions

Business cooperation, broadly defined as an alliance between two or more independent organizations, is a deliberate activity aimed at acting as partners in chosen business area and time, assuming achieving mutual benefits of differ-

ent kinds. The alliance does not exclude participation in other partnerships and competitive relations. Cooperation may take different organizational and legal forms (Glaister and Buckely 1996). The partnership gives the parties a possibility to satisfy their needs, while still remaining independent, by resource connection, exchanging and distribution, and broad co-creation of products, services, procedures and organizational processes (Serrat 2009). Some definitions underline longevity as a characteristic of partnerships: "Business relationship is more than just a deal. It is a connection between otherwise independent organizations that can take many forms and contains the potential for additional collaboration. It is a mutual agreement to continue to get together, thus its value include the potential for a stream of opportunities" (Moss Kanter 1994: 98).

Engagement in strategic alliances is also considered to be a "hard times strategy," the answer for increasing market uncertainty by reliance on trustworthy external partners (Lorenzoni and Lipparini 1999). Economic cooperation means that partners have common goals, and they strive to share actions, resources and capabilities while functioning in the same business network, but accordingly to their competitive position they may also try to act in competitive way (Jankowska 2009). This situation is called *coopetition*, that means that firms are partners and competitors at the same time, but in different areas of their activities and/or organizational functions. *Coopetition* and *co-operation*, as well as *competition* and *coexistence* are specific types of interactions among business organizations (Bengtsson and Kock 2000).

Partnerships aimed at connecting dispersed resources vary in their forms from formally arranged (based on strict contract norms and equity exchange) to loose (based on mutual trust), weak and distant (based on occasional collaboration) to strong and close (based on strict organizational integration and interdependence), organized along the value-chain and horizontally connecting partners around selected links. Among many classifications Moss Kanter (1994) divides partnerships into: mutual service consortia, joint ventures and value-chain partnerships.

2. Motives to cooperate

In order to properly understand the essence of cooperative relationship it is necessary to determine the motives it was created for. Main motive for cooperation as business relation is striving for leveraging effectiveness and efficiency of firm's activities, both according to competitive potential building and strengthening competitive position. In that context cooperative strategies

(including co-opetition) act as alternative to internal development and capital investments (equity exchange, mergers and acquisitions).

The most common strategic motives of strategic alliance are (Buckley 1992):

- risk distribution among partners;
- production rationalization, economies of scale;
- complementary technology transfer, patents exchange;
- competitive structure shaping;
- adjustment to host country policy;
- international expansion facilitation;
- vertical quasi-integration;
- market position consolidation;
- other, like: diversification through alliance, smoothing the way to unknown sectors and markets thanks to partner's experience, entry barriers elimination.

3. Cooperation success measures

Economic cooperation effectiveness is a notion referring to the degree of goals achievement. It is important to remember that partners define both common and individual goals, not all of them are the same (e.g. the aim of the alliance is to get better access to remote market and create new product together, while the aim of each partner may be leveraging some specific capacity by learning from the partner).

Most often mentioned cooperative goals are connected to the relation itself, its longevity and stability, innovativeness and interorganizational learning and to economic success of relationship expressed in financial measures. Hamel divides success metrics into two groups: traditional are partners' satisfaction and partnership longevity, and alternative are related to partners market position: bargaining power and competitiveness (Hamel 1991). Anderson's cooperation performance evaluation model (Anderson 1990, Holtbrügge 2004) combines traditional quantitative financial performance measures and market position indicators with those reflecting cooperative processes connected with learning and general state of cooperation characterized by harmony among partners, morale, productivity, adaptability, innovativeness and changes in financial resources.

4. Alliance management problems – critical success factors

Doz and Hamel (2006) proposed broad set of subjects that may be seen as challenges towards alliance managers (traditional and contemporary), creating both aims and success merits. It is presented in Table 1. Giving good answer to the questions stated here is a subject of cooperative management.

Table 1. Traditional and contemporary challenges toward alliance management

Traditional point of view	Contemporary approach
Will the alliance create value, and if so, who would benefit?	
– costs and profits analysis – profit creation priority – simple complementarities – structure set at the beginning	– comprehensive strategic analysis – pressure at advantage gaining – comprehensive competence combination – structure elaboration process
Will the alliance pass the test of time?	
– goals management – securing particular interests – commitment – longevity reaching	– moving aims monitoring – securing a set of interests – options creation and support – competitive advantage building
Will the partners reconcile conflicting priorities and interests?	
– cooperation – interdependence – trust	– co-opetition – risk of unstable interdependence level – well understood common interest
How would each of partners manage its growing alliance network?	
– married couple – relationship	– care for own interests, diplomacy – alliance networks

Source: Doz and Hamel (2006: 32).

If the managers are to guarantee the alliance success they must be aware of critical success factors and be able to create specific corporate asset – capability to be a good partner. Propositions of cooperation critical success factors given by different authors are listed hereunder.

Holtbrugge (2004) divides factors influencing cooperative success into two groups: (1) situational conditions, which are external constraints that cannot be influenced by partners (or their influence is relatively weak), among them the strongest impact have: competitive rivalry and industry concentration; (2) management instruments: partner selection routines, cooperation agreement, alliance management structure, partners' acculturation and knowledge management.

Doz (1996: 69–70) sees some aspects critical to the success of the alliance outside partners, inside the partnership management process and in partners themselves:

1. The environment of the partnership creates both external and internal strategic contexts for partnership and partners themselves, it is crucial that partners share the perception of external conditions and are compatible in individual strategic context which is important for the future convergence between partners (their common learning and common sense making).
2. Goals and motives – partners behaviour in the process shows real motives, but what is also important, the collaboration process may lead to new set of goals – thanks to learning process partners may see new circumstances which lead them to their goals revision.
3. The task of the partnership – basic assumptions and the way the coalition is to be performed, sometimes the reason for failure is in bad task definition just at the beginning.
4. The process of cooperation – recognizing differences and similarities in resources, processes and routines and finding the way to constructively use them: eliminate, combine or improve in a way to cooperate efficiently.
5. The skills of partners – the main problem is skills learning: the ability and willingness to learn, what is important here is the scale and pace of individual and relational learning, which may show both the level of commitment in partnership and real intentions of partners (slow learning which may show small relevance of the alliance or weak belief in its success, and learning race – learning faster than partner even at partner's expense are often considered as opportunism and alliance pathology).

Moss Kanter's analysis concentrates at partnership process and proposes that the best organizational partnerships are those that meet eight criteria, the so-called 8 Is (Moss Kanter 1994: 100):

1. Individual excellence – both partners should contribute something valuable to the relationship, it is better of both sides to represent positive motives e.g. of connecting resources for common chance.
2. Importance – the relationship should be seen as important in partners' strategic contexts, so they want to make it work.
3. Interdependence – it is important that both sides need each other because of their complementary assets and skills.
4. Investment – the relationship may need some visible signs of commitment, like e.g. cross-ownership, common authorities/management, joint investments.
5. Information – effective communication, open information sharing is of essential meaning starting from dissemination of partners objectives and goals, through necessary communication in learning processes, to problem solving mechanisms.
6. Integration – it is necessary for partners to create a structure of linkages and methods of common operations leading, that would enable partnering relations of both learners and teachers at different organizational levels.

7. Institutionalization – it is a precondition of relation's stability, appropriate formal status, partnership contract contains agreed regulations of power sharing, sides' responsibility and benefits distribution; institutional frames are especially important when the complexity of relationship increases.
8. Integrity (moral soundness; honesty) – this factor depends on trustworthiness of partners who should not abuse each other, integrity means respecting partners and contracts and not acting opportunistically.

Even more detailed approach is visible in works of Ohmae (1989) and Hughes and Weiss (2007), who concentrated on managerial advice:

1. Collaboration must be seen as personal commitment.
2. Be aware of additional management time needs.
3. Mutual respect and trust are essential.
4. Mutual benefit is vital, collaboration must be a win-win situation – meet mutual expectations.
5. Tie up a tight legal contract but go beyond formal governance structures and focus on the relationship.
6. Circumstances change – be prepared for that.
7. Develop metrics pegged not only to alliance goals but also to alliance progress.
8. Share vital activities with your partner and socialize, make your people do so, too.
9. Cultures are different (both geographic and organizational) – instead of trying to eliminate differences, leverage them to create value.
10. Recognize your partner's interests and independence.
11. Make sure that your vision is approved – collaboration needs corporate approval.
12. Celebrate achievement together.

To sum up, partnership's effectiveness and efficiency is influenced by a broad set of factors: those coming from the environment – partners' home markets and the arena of partnership; related to transaction attributes – information asymmetry, asset specificity and differences in bargaining power as well as connected with firm characteristics – cooperative capabilities and trustworthiness. By managing these factors (some of them remain beyond firm's control) alliance members try to reach their business goals, which means they try to maximize the gain from the relationship and minimize its cost. The latter means, among others, efforts made in order to balance formal and informal governance methods preventing opportunistic behaviour (Hansen, Hosskinson and Barney 2008).

5. Collaborative advantage – concept characteristics

As it was said in above sections, it is clear that managing successful alliance demands from partners the ability to be a real partner not just a contractor. In a present business environment of numerous sectors, such ability is seen as a key success factor, in literature it is called relational capability (“the capability to interact with other companies” according to Lorenzoni and Lipparini (1999: 317)) or collaborative advantage (“being a good partner” (Moss Kanter 1994: 96)). The ability to be a partner to other company in business relations may decide of firm’s ability to renew its competencies and reduce inertia and susceptibility to change.

Managers design and shape relational context of their companies in order to create a sustained cooperative advantage, so interfirm network creation is a deliberate process. Managing strategic alliances is an idiosyncratic strategy of building competitive advantage through the combination of alliance’s resources: “Relational capability can shape interfirm networks representing a structure-reinforcing competence” (Lorenzoni and Lipparini 1999: 335). If alliance management is a deliberate process – a strategy, the relational capability/collaborative advantage is a core competence underlying this strategy success.

Relational capability/collaborative advantage is a dynamic competence (Teece, Pisano and Shuen 1997), it changes over time and the process of its development decides of its final quality as a competitive advantage driver. Looking at the above set of cooperation’s critical success factors, it is obvious that relational capability is a complex one and its value as competitive advantage factor depends both on a set of firm’s characteristics and processes that lead to their modifications. Being a dynamic competence, relational capability is time embedded, which means that it may be analysed at different points of time showing different sets and levels of components. Some scholars indicate *ex ante*, as well as *ex post* cooperative competence characteristics (Czakon 2008). *Ex ante* cooperative competence components are those influencing organization’s ability, proneness and willingness to cooperate as well as its learning capacity. An example of *ex post* cooperative competence indicators may be found in Anderson’s cooperation performance evaluation model (Anderson 1990, Holtbrügge 2004).

Competence dynamics reflects the process of organizational adaptation, both proactive and reactive to environment changes and interorganizational conditions. Having this assumption in mind we may divide cooperative competence components into two groups (Czakon 2008): *ex ante* components are those that are of critical importance before partnership and in the early stages of relation and *ex post* components – elaborated during partnerships, results of joint actions and learning. Because of cumulative learning effect that builds

firm's competences, partnering experience elements may be in the next point of time regarded as *ex ante* competences – the potential to start new cooperation. The sources of these capabilities lay in firm's specific features and their quality determines its bargaining position/power in the relationship (see Barney's VRIO model, Barney 2002).

To sum up numerous propositions present in literature, firm's collaborative advantage is based on three groups of cooperative capabilities (Hansen et al. 2008): (1) ability to identify economically valuable set of complementary assets in the environment; (2) ability to assess real value of combined external and internal assets from the individual and mutual strategic perspective; (3) ability to manage the alliance appropriately in order to achieve a win-win result.

Cooperative relationship may be also analysed with reference to five dimensions that describe its dynamics (Birnbirg 1998):

1. The degree of partners' commitment (both absolute and relative).
2. The symmetry of expected and achieved profits from cooperation.
3. The uncertainty level coming from both partners' behaviour and external conditions.
4. Mutual trust degree.
5. Length and stability of the relationship.

The importance of each of these dimensions to particular relation may differ among relationships thus influencing their efficiency. Creating the optimum combination of these characteristics is the subject of cooperative relationship management.

Next section of this paper is dedicated to a more detailed analysis of those specific components of cooperative advantage.

6. Collaborative advantage – what are its components?

6.1. Propensity to cooperate

Positive attitude towards cooperation as an alternative strategy, is based on two competencies: ability to identify market chance of valuable combination of complementary resources possible through partnership with other market subjects and willingness to search for possibilities to cooperate in order to exploit identified resources. Apart from market research capabilities that are not investigated here, there exist a wide range of features building the so-called partnering experience, that is seen as an important precondition of cooperative relations.

6.2. Partnering experience

Partnering experience is an accumulated experience gained from any prior inter-firm alliance, that may enhance firm's relational capability. Firm may gain experience both from repeatedly cooperating with the same partner (partner specific experience – PSE) and from cumulative learning from all the alliances it has been involved in (general partnering experience – GPE). Partnering experience may have positive impact on relational capability by guiding appropriate selection decisions and fostering relational mechanisms of mutual trust, reciprocity and loyalty that weaken negative effects of partner's opportunistic behaviour (Gulati 1995, Gulati, Lavie and Singh 2009). Other positive effects may be: openness to commit critical resources to the alliance (Dyer and Singh 1998), savings on governance costs thanks to greater level of trust and better efficiency of established problem solving mechanisms (e.g. conflict prevention) (Gulati and Singh 1998, Kale et al. 2000). General partnering experience gains may differ from partner specific ones in favour to the latter. PSE gains are based on specific, more stable learning processes, and richer learning opportunities in recurrent alliances, but only under condition that partners actively influence learning process and look after longevity of partnership. It is also helpful if a firm simultaneously seeks for occasions for new alliances to put some novelty into gained experience and achieve synergy effect also by GPE. The partnering experience may be translated into economic gains when a firm takes care about application of knowledge learned during alliance (Gulati, Lavie and Singh 2009).

Gulati and Sytch (2008) use the term “shadow of the past” to show both positive and negative aspects of partnering experience. One of important dimensions of partnering experience is relational trust that is built in three steps process (Lewicki and Bunker 1996). First step is rational, based on calculations and economic analysis. It is a presumption to look for deeper foundations of lasting relationship in partner's behaviour. Observed behaviour and knowledge about the partner build non-calculative elements of trust. The last step in this process is trust based on shared values, incorporated by both partners, that assures similar actions in specific situations. Interorganizational trust is endogenous and to some extent depends on former interactions among partners, which creates and strengthens conviction of mutual trustworthiness (Gulati 1995, Dyer and Chu 2000). Non-calculative trust is also basic to create good relations among organizational boundary spanners, representing firms in relations with external partners.

Common history takes effect in tendency to favour familiar firms in partner selecting process and to build less restrictive, more general contractual frames. It is also in people's nature that they try to repeat positive past experience by

reconstructing context of former alliances into present ones. This inclination may also have negative impact on relational capability – relying too much on familiar partners may weaken firm's alertness to new opportunities as well as opportunistic behaviour and undermine learning capability due to inertia (Hoffman et al. 2010). Repeating context of once successful cooperation does not guarantee another success, mostly because of different historical context between and inside organizations, which means that even in the same or similar alliance context different firms may behave in a complete different way (Boddy, Mackbeth and Wagner 2000).

Partnering experience, both positive and negative, may result with establishing mechanisms of proper partner selection, based on economic analysis as well as organizational similarity and cultural coherence.

6.3. Social embeddedness

Relational capability and partnering experience may be leveraged by the social context of cooperation – firm's embeddedness (Rooks, Raub and Selten 2000). Structural embeddedness may influence the firm thanks to the access it has to other partners in environment and their resources (e.g. information), institutional embeddedness means functioning in a certain combination of formal and informal rules that may allow for credible agreements and commitments based on trust. Social embeddedness is a feature of environment that may offer the firm a handicap. In this context, relational capability may also mean that the firm is able to act, even if the social context is not favourable. Temporal embeddedness is what was called above "the shadow of the past," common history with partners means having access to first-hand information, that is cheap, reliable, detailed and accurate (Grannoveter 1985) as well as having done some relation-specific investments. Ability to create bonds between partners and with organizations in the environment, makes business context for the relationship more stable and creates reciprocity effects and loyalty in partners, not only regarding present operations but also as it comes to the anticipated future cooperation ("the shadow of the future effect"). That makes partnership management less costly due to trust-based, non-contractual safeguards against opportunism as alternative to contractual or even hierarchical ones (Rooks et al. 2000).

When cooperating partners used to be, or still are, competitors (the co-opetition situation), they tend to be competitive embedded and this fact can also positively influence their mutual cooperative plans. Trapido (2007) notes that the mechanism of trust-based cooperation emergency among former competitors (conflicted ones) is quite similar to the one happening among firms

with positive history. Competitive interactions among mutually aware competitors result in their great knowledge about each other on organizational and individual levels, established channels of interaction, that may be now used for positive purpose and personal relationships among potential boundary spanners: owners, managers, experts – all that may be helpful in future cooperation. Relational capability may be boost even by having “proper competitors,” although it is worth mentioning here that positive effects of competitive embeddedness may appear fully only if partners do not have strong negative reminiscences that may make them unable to shift to collaborators. Co-opetition is also more possible in environment of strong cooperative business culture.

Good partnering experience and favourable social embeddedness effects can mitigate trust building in cooperative relationships as well as trust enhancing ability of firms. Those features may also be important for development of the ability to create learning networks, crucial to gain alliance’s competitive advantage.

6.4. Managerial abilities

For a successful cooperation, partners have to create favourable context that consists of several areas in which partners must possess resources and managerial capabilities. They are: alliance objectives and expected results, financial and other resources available to alliance, technology and information systems used by partners, people with their knowledge, skills, goals and attitudes that may affect alliance result, business processes and organizational structures both individual and elaborated to satisfy the demands of common activities, cultural background and power relations – its sources and distribution between partners (Boddy, Macbeth and Wagner 2000, Wziątek-Staśko 2010). Relational capability covers all the subjects mentioned.

6.5. Alliance governance routines

At the beginning of any relationship there is a need to establish alliance governance mechanism, a set of general governing rules defining: power and duty sharing, resources exchange, profit distribution, control variables and problem solving. Appropriate governance mechanism may influence the effectiveness of the alliance as a tool to minimize opportunism risk. As a managerial capability

component, alliance governance routines may be seen as a competence to foresee which governance approach would be the most efficient in a certain situation. Ring and Van de Ven (1992) describe two types of contractual management: discrete contracting means that alliance partners prefer to act in strictly to the partnership contract, which is rather complicated and detailed, and plays central role even in day-to-day management; other approach is relational contracting, when partners agree upon primary contract, that gives frame to the relationship, but in daily operations they rely mostly on social relationships elaborated during previous partnerships (partnering experience) or established in present one, as well as on the basis of mutual trustworthiness. Contractual management capability is a function of partner's trustworthiness and alliance risk evaluation, contract building competence, social embeddedness, bargaining power and ability to assess which governance mode is the best in particular situation's gain maximizing – opportunity minimizing paradox (contractual-management type capabilities versus relationship-management type capabilities) (Hansen et al. 2008).

6.6. Structuring the relationship

Apart from the partnership agreement, the alliance also needs appropriate organizational structure that may shape partners' interdependence. Alliance's structure building ability is a competence of gaining the balance between governance mechanisms and operations management as well as of proper economic integration level. One of the main motives for partnership is getting access to partner's resources and one of the most often mentioned alliance success measures is stability, because resource exchange and inter-partner learning are durable processes. Both of them are affected by economic integration of partners, their interdependence – “the extent to which resources contributed by different alliance members and subsequent operations using these resources are effectively blended into an alliance's value chain to the point where if one member withdraws, the remaining member(s) suffer great loss” (Luo 2008: 617). As Luo accentuates, increased economic integration may improve alliance performance by stronger structural and resource coupling, activated interparty sharing that improve persistence and effectiveness and increase interparty trust, joint governance, and procedural justice.

As a building factor of firm's cooperative advantage should be considered an ability to make strategic decisions about the most proper economic (structural) integration level with concurrent social and cultural integration. Economic integration level definition influences levels of other factors critical to alliance's suc-

cess as sustained relationship: commitment, forbearance, reciprocity, knowledge integration, inter-partner learning as well as opportunism and competition for individual profits. Ability to structure optimal resource interdependence in an alliance: pooled, sequential or reciprocal (Gulati and Singh 1998), optimizes coordination costs, curtails internal uncertainty and intensifies inter-firm ties where necessary, thus enabling the alliance to reach common goals (Gulati 1999, Lorenzoni and Lipparini 1999). This network structuring capability value is strongly dependent on other “capabilities required to manage a progressive intensification of interfirm ties” (Lorenzoni and Lipparini 1999: 318): contractual and trust-based governance, shared management structures, symmetric power relations, conflict management. Some authors point out that sometimes the cause of problems in relationship is not the conflict itself but efforts to avoid it, e.g. hiding important information, communication failures and acting on one’s own instead of cooperation jeopardize the partnership stability (Holtbrugge 2004).

6.7. Boundary shifting mechanisms

Social embeddedness mentioned above that increases propensity to cooperate (and so is crucial before and at the beginning of cooperation) and socio-psychological congruency along the process of cooperation often need a boundary-shifting mechanism. That is another content of organizational relational capability based on interpersonal interactions.

Scholars frequently mention the role of the so-called boundary spanners, organization members who are closely involved in interorganizational relationships. Boundary spanners’ role is: to create communication channels and develop open communication routines, to hand on and form information that has to be received and understood properly, to shape mutual perceptions and expectations of partners, to help in maintenance of interorganizational ties at individual and group level and to enhance communication effectiveness and inter-partner learning (Gulati and Sytch 2008). Boundary spanners’ role is based on personal ties with their counterparts, which they are able to create and intensify. Personal relations and friendships supplement or even substitute people’s organizational roles and thus help to build interorganizational trust and may provide both formal and informal base for procedures used at different stages of relationship (negotiations, commitment and execution of an alliance) and for conflicts resolution (Ring and Van de Ven 1994). This institutionalization of initially informal interpersonal commitments is possible because boundary spanners are seen as representing the organization they come from, and so speaking its voice (Gulati and Sytch 2008).

6.8. Trust management

Economic and social congruence essential for successful alliance management may only be possible if partners put their trust in each other (Wziątek-Staśko 2009). Individual trust arises through personal interactions and organizational/social trust in complex relations comes from two types of sources: reciprocity norms and social networks (Putnam 1993, 2000). Reciprocity norms may upgrade cooperation, because they: raise infidelity costs (infidelity meaning violation of partnership agreement), facilitate communication and information flow. Using reciprocity norms strengthen their influence on partners and, to some extent, their environment and helps to embody firm's individual partnering experience advantages to a new partnership. Interorganizational trust, both calculative – based on partner's assessment and market reputation and non-calculative – based on an opinion made during repeated interactions showing partner's motives, attitude, morality and behaviour has a significant meaning to the relationship organization, course and rents gained.

Trust has a positive impact on factors determining relational rents (Dyer and Singh 1998): trust supports organizational problem-solving routines, positively influences efficiency and effectiveness of governance mechanisms and partnership longevity, increases the degree of mutual congruence at organizational and cultural levels, enhances partnership stability and longevity and thus helps to develop co-specialized assets – source of alliance's competitive advantage (Hoffmann et al. 2010).

One of factors building relational advantage is also ability to create trust-based environment for partnership, that in turn relies on firm's own trustworthiness. Barney and Hansen (1994) propose that in certain conditions partners' trustworthiness may be considered as a source of alliance's competitive advantage as it may enable partners to put less attention to, sometimes costly, formal governance mechanisms and concentrate more on the core of cooperation.

Collaborators' trust in each other should come together with greater readiness to share information about themselves and their markets (Child and Faulkner 1998). Interfirm trust may be analysed as a process of calculating each other's intentions, mutual understanding and then developing chances to progress the relationship. All that depends on the time – longitude of acquaintance and collaboration, its context – both business and cultural, and managerial practices used in creating partners' connections and dependencies.

6.9. Acculturation

At the stage of partner selection and while developing partners congruence another critical success factor is acculturation – the convergence of corporate cultures. The process of integration of partners' values, attitudes and symbols encourages mutual understanding and learning processes, reduces conflict ability and thus reduces the need for technocratic coordination mechanisms (Holtbrugge 2004). Empirical evidence shows that organizational cultures convergence manifesting in similarity of goals, values, decisive structures and management styles, is one of the most important factors influencing effectiveness and stability of cooperation (Sulimowska-Formowicz and Stepień 2011).

The source of acculturation capability is the ability to create climate for cultural convergence – to learn about each other, although the process itself may be hardly manageable, especially in international alliances, because of embeddedness in organizational culture and national cultures as well and because of unconscious nature of some parts of the culture (Hofstede 2000). Some elements of that climate creation may be: using “cultural cross-border commuters” or boundary spanners' tie-building capabilities, building reward system on the success of cooperation not on individual achievements, initiation of intercultural training procedures (Holtbrugge 2004).

6.10. Organizational learning – knowledge management

One of the significant goals of cooperation is competence leveraging and mutual access to valuable know-how. In this context, relational capability means: individual and organizational learning ability, and knowledge management processes (mostly knowledge exchange and absorptive capacity (Cohen and Levinthal 1990)). At interorganizational level, basic factors enhancing cooperative learning and limiting opportunism are: trust and mutual commitment of similar degree. Knowledge exchange mechanisms build common competence of the partners, but absorptive capacity must be created individually, as its quality affects ability to gain from cooperation. Important organizational characteristic in this context is ability to share knowledge and protect it simultaneously. “The dissemination of knowledge among partners improves the absorptive capabilities of the whole network as well as mutual adaptation of network participants” (Lorenzoni and Lipparini 1999: 334).

Inkpen (1998) identified three dimensions of maximizing interorganizational learning: the intensity of knowledge transfer through established know-

ledge connections network, based on partnership social capital; affinities of alliance knowledge with partners' knowledge and knowledge about alliance management, cultural congruence between partners at individual and group level.

Hamel (1991) mentions three determinants of learning in alliances:

1. intent – desire to learn originating in firm's competitive strategy (collaborative orientation to an access to partner's assets or competitive orientation aimed at internalization of partner's skills);
2. transparency – opportunity to learn determined by partner's attitude towards outsiders and openness to share information and knowledge, character of learned skills – extent to which they are easy to decode and learn (e.g. path dependent know-how or context-bound know-why); and
3. receptivity – ability to absorb knowledge.

According to the individual motive of getting into the alliance, learning capability may mean: being able to access and exploit partner's knowledge or being able to internalize partner's assets or even outlearn him. Although learning race is often seen as partnership aberration (Barney 2002), in competitive alliances it is often a common practice based on individual economic goals of firms aiming at raising their bargaining power and competitiveness more than at getting satisfaction from stable and prolonged cooperation (Hamel 1991).

As partnership may become arena of inter-partner competition for competence (Hamel 1991), one of the most important dimensions of relational capability is also ability to protect oneself from knowledge capture: opportunism avoidance and knowledge leakage prevention. As far as it comes to opportunistic behaviour, proper solution may be contractual governance, legal tools (e.g. patent rights) and trust building by social and institutional embeddedness. But even in fair, durable relationship partners should be alert to actions aimed at interception of assets that were not intended to share.

6.11. Ability to communicate

Another factor important at all stages of cooperation is ability to communicate effectively. Communication is seen as crucial to guarantee partners' commitment to the relationship, through its four functions: instruction and feedback dispersion, reduction of uncertainty, socialization, coordination (Wahyuni et al. 2007).

Partnership develops and brings desired gains on condition that (Sulimowska-Formowicz, Stępień 2011):

- communication among partners is seen as effective in uncertainty reduction, as it raises trust and switches partners' efforts towards potential development;
- information exchange increases and communications routines get standardized;
- information exchange and cooperation help coordinate partners activities and that enables partners to enhance partnership scope due to growing compatibility and trust;
- partners share decision making procedures.

7. Conclusions

The capability to cooperate successfully is one of the most important competitive advantages in nowadays business environment. Business cooperation may be an efficient competitive strategy, not only a second-best one, but there are some conditions to be met. Partnering organizations should concentrate on common goals and common activities to the same extent to which they pay attention to building individual collaborative advantage, even if it needs to allow the partner for competitive behaviour apart from collaborative one.

Married couple analogy is often used to describe the process of successful alliance development – alliances work only when both partners do (Ohmae 1989). Moss Kanter's (1994) analysis shows that the meaning of partners' own features and relational ones to the success of partnership change over time, and the most successful alliances are those in which partner tend to compromise and pay attention to close social, organizational and cultural interdependence, thus remaining independent subjects (just like in happy marriages). Hamel (1991) stresses partners' independence as especially important in achieving individual learning objectives (along with mutual ones), main motive of many alliances. It may be said that being a good partner means commitment to the relationship and not forgetting about oneself – striving for a real win-win situation.

To sum up what was said above, this study stresses up the multidimensional character of collaborative relationships and thus the necessity for researcher to pay attention to the complex nature of cooperation's critical success factors. To understand this phenomenon properly research methodology should be based on a broad set of variables and assume necessity of interdisciplinary approach.

8. References

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The effectiveness of network connections in operations of a cluster

Abstract: A cluster is a group of companies that co-operate in accordance with a mutual goal and keep the independence in other areas. Clusters are an example of an innovative organisation in a local and regional market. The aim of this article is an attempt of evaluation of a network effectiveness.

Key words: cluster, network, effectiveness

1. Introduction

The concept of network connections of enterprises is not new among a series of many organisational solutions available on the market. To increase the effectiveness of functioning and increase the competitiveness many entrepreneurs decide to enter into various networks. They are based on a dominance of capital ties, organisational ties, social ties and others, but their main aim is to secure for participants a satisfactory level of benefits considered from the market's point of view. The purpose of this article is the attempt to present the evaluation of effectiveness of such a network functioning regardless of whether the results can be seen in quantitative or qualitative terms. The following considerations are based on an analysis of operations of industrial enterprises and service providers operating on the Polish market and functioning within the clusters.

The purpose of this article is to indicate the possibility of assessing the effectiveness of a cluster. The author points out a tool for assessing the effectiveness. For this purpose was used an information base connected with own re-

search that were conducted on the development of clusters in 2008 verified with the present data (Poland, 35 clusters, year 2011).

Information contained in Tables 1 and 2 concerning the directions of cluster's development are the author's version that results from the evaluation of clusters (35) operating in Poland, with special consideration of Beskidzka 5 cluster. Assessment of the effectiveness was made for this particular cluster. A source of information for creation the ranking of success factors (in accordance with the current methodology) were direct opinions of group of experts related with the cluster. The author treats the presented proposition as an example that can be verified with accordance to the current research needs.

2. Network connections of enterprises

Networks operating in the market can take many forms. Also the ways they can be defined are diverse as exemplified by numerous domestic and foreign publications which examine issues of enterprise networks.

A network is defined as co-operation between entities to achieve the benefits, including competitive advantage, and co-operation is in the form of co-operative relations. A network can also be seen as "a set of interconnected relationships of exchanges between [...] entities associated with a specific business" (Strykiewicz 1999: 34) for "a collection of selected relations (co-operative and competitive) with selected partners that fit into the enterprise's market relations" (Garnarczyk 2004: 15). A network can also be identified as a part of the environment in which the organisation exists creating a structure of relationships that overlap one another (Starnowska 2005: 56) but generally speaking – networks are a collection of various dependencies between different entities that work for mutual interests (Rosińska 2005: 34–45).

In the research literature a lively discussion continues about the definition and characteristics of network connections. J.C. Jarillo (1995: 67) considers as network enterprise such an organisation in which one company takes the role of chief inspector of the organisational and tangible and intangible flows between companies provide efficient meeting the expectations of the final customer.

In another approach we compare a network to an animate nature, and then a network connection is treated as a web functioning with a minimum of hierarchical structures.

A network organisation can also be treated as a system of relationships between companies but these relationships should have horizontal character (Baker 1992: 45–47). It is noted that the proper functioning of a network organisation

depends on a convergence of goals that individual entities want to achieve and an ability to communicate between entities (Castells 2000: 32). A network organisation can therefore be defined by a specification of its features (Nohria and Ghoshal 1997: 16) which can be divided into four groups. The first feature of a network organisation is a transfer of resources between units, which form a network. The second feature is a diversity of relationships between entities from hierarchical (there are then relations with headquarters) to loose market contacts. If headquarters appear its role is limited because of the related entities' independence in a network. The third feature of network connections is limited integration of entities as a result of differences in specific objectives and strategies. However, there are objectives and strategies of the entire system, which improves its competitive position. Another feature is creation and strengthening of information channels in horizontal and vertical systems.

In addition, analysis of literature and analysis of individual network cases conducted by the author indicates that the links in the network structures are long-term, and contacts between partners are repetitive. Extending a time horizon of contacts and their repetition can work out terms of co-operation by reducing transaction costs.

These observations have been made much earlier by experts in the field of management, which is confirmed by the opinion of R. Acelrod from 1984. Companies that maintain more often and longer mutual contacts with each other achieve much greater benefits than those which concluded temporary relationships (Acelrod 1984: 38).

From the foregoing considerations it follows that network connections of enterprises operate by structured interaction based on a co-operation agreement. These connections have different level of hierarchization (or at all) and are based on long-term, repetitive contacts which serve for continuous adaptation to rapid change.

The essence of this approach reflects the OECD definition, which treats a network of enterprises as "a collection of companies that use shared resources to co-operate in joint projects" (OECD 2001: 11). This is confirmed by Cooke (2002: 34) who supplements network characteristics with the following conclusions:

- small networks seek new companies;
- networks with strict conditions for membership are usually characterised by vertical connections, and are comparable in terms of size (as opposed to the typical hierarchical structure of suppliers);
- networks are based on strong interactions arising from trust, reputation and image;
- networks should be bound by legal formalisation but this practically not always happens, although all the networks rely on some type of contract resulting from the jointly undertaken actions;

Causes of network development should be seen:

- in internationalisation processes and globalisation;
- in the growth of a competition's intensity;
- in increasing uncertainty in functioning of enterprises especially from the SME sector;
- in a large complexity of finished products;
- in an advanced specialisation;
- in development of information and communication technology;
- in diversity of consumer's preferences;
- in possibilities of obtaining additional financial resources (especially in former socialist countries where there are large subsidies from EU for companies operating in cluster networks).

Network connections of enterprises may take different forms. Network typology results from an assessment of a dominant company's position, from strength and direction of a relationship between partners and network access. Taking this criteria into account, we can distinguish:

- a) dominated networks – connections are based on outsourcing and a dominant company has strategic alliances with co-operators.
- b) network of equal partners – partners have similar bargaining power and the network can be changed depending on market's need and development possibilities of the system (Child and Faulkner 1998: 49).
- c) informal networks – connections based on informal relationships often within a family.
- d) formal networks – based on formal connections with support of professional law and economic advisers and scientists.
- e) soft networks – these open networks, allowing direct contact between participants to exchange experiences, have a lot of participants and membership requires a minimum safeguards e.g. charges a membership fee.
- f) stable networks – based on agreed by law principles and oriented to specific actions with the use of planning; there is determined allowable amount of members; the network is on the outside represented by an agent and practically these networks take a form of alliances.
- g) vertical networks – are broad, they combine companies with similar sizes and complementary profile of action; these formal networks function like hard networks achieving results that are not available to individual companies (Cook 2002: 36).

Network division can also be done because of a nature of the relationship between participants including a network environment and then networks are divided into:

1. Market networks – entities related with the market and producing entities.
2. Regional networks – the division results from a territorial position.
3. Organisational networks – result from ownership and financial connections.

4. Industrial districts – local industrial connections based on co-production.
5. Complementary network connections – co-operation based on vertical co-operative connections.
6. Co-operation and collaboration networks – there are various ranges of connections but mostly they are horizontal ones (Casalet and Gonzalez 2006).

The conclusion derived from the foregoing consideration is that networks are multi-entity structures. Networks may take form of strategic alliances, virtual enterprises, integrated supply chains, acquisitions and clusters. Because the cluster theory is the subject of the following point the author limits herself in this part to a brief discussion about other forms of network.

Strategic alliance is the most common form of co-operation of a contractual nature between existing or potential competitors concluded in order to fulfil a specific strategic objective (e.g. enter into new market, develop new product).

Alliances have basic forms:

- co-operation agreement (licensing, franchising);
- joint venture partnerships – characterised by mutual risk, mutual project, mutual new company;
- purchase of capital share which consist in a partial purchase made in such a way that parties still retain independence (Rokita 2005: 104).

Alliance can be strict (partners produce substitutes, collaboration involves single operations), additive (partners produce similar products, there is a division of tasks but mutual assembly of the final product), complementary (partners produce different products, the aim of the alliance is to extend geographically the market, co-operation includes single actions).

Alliances can form groups called networks of alliances. This happens in situations when some difficulties arise in making mergers and acquisitions. Group forming a network bypasses these limitations and combines strengths of the best companies. The alliance has a global reach, a common niche and appears as a uniform enterprise.

Supply chains are created by entities which are engaged in obtaining, delivering, purchasing and collecting raw materials, material flow within companies, product storage, distribution and transport. An integration of suppliers and customers will occur if we assume a co-operation of all companies participating in the chain of transmission assets from the acquisition of raw materials to a final recipient. This is connected with information and data flow (usage of information centres that provide the VAN-type services – network of additive value) in ensuring the efficiency of the entire process (Barcik 2005: 105). Supply chains are a form of vertical and hard network.

A virtual enterprise is a form of horizontal integration with focusing on leading competencies in order to realise a new offer and get closer to a customer. The virtual enterprise is called a dynamic network in which there is a broker connecting partners, depending on the task.

Networks are also a form of acquisitions involving acquisitions and mergers. The acquisition is to gain control by a company over another company through purchasing its shares in an amount sufficient to administrate it.

The merger is an amalgamation of enterprises as a result of an agreement in order to create a new entity where each company, so far independent, loses its individuality. The merger is voluntary.

Inside enterprises also networks are forming but those networks are based mainly on solutions that are not structured. The teams are formed in order to realise specific tasks called task groups (groups of mutual interests, knowledge teams, hot groups, practitioners community) which are innovative forms of networking within organisations.

Solutions within organisations and external relationships may relate to connections appearing in natural systems. An example of this is the concept of holons network (Maciaszek 2005). Its essence consist in the fact that every element of the whole must work together with another element at different levels and hierarchical systems to achieve the objective which is a life of the whole. The parts, called holons, belong to different levels creating co-operative in horizontal and vertical systems which are called holocracies. The whole must function as a living organism in accordance with the adopted target. This solution is similar to a fractal network where we can observe self-similarity, self-reliance and full dynamics of a part of the whole called fractal. Connections between fractals are based on a mutual provision of services but the central function co-ordinating the whole is not entirely abandoned. This solution is used in tourism, hotel systems or certain types of clusters where entities are centred around the largest of them.

The conducted network characterisation indicates the presence of mutual features. These are:

- reciprocal connections,
- dependence of various entities on resources controlled by other companies,
- connections freedom,
- long-lasting connections,
- poor hierarchisation or lack thereof,
- lack of dominant entity or the dominance weakly accentuated, which usually results from market position or the entity's size but not from entity's network management,
- transfer of resources between units,
- economic and law independence of units,
- lack of territorial restrictions,
- fulfilment of own goals by individual entities of the network,
- improvement of the strengthening of information channels.

Network connections allow participants to achieve tangible benefits. Analysis of the literature allows to define these benefits as:

- reduction of risks arising from the implementation of new products,
- increasing the speed of operation,
- improve the information collecting,
- reduction of opportunistic behaviour,
- increase partners' innovation with its effects on the market.

There are different types of networks on the market and in most cases they have nature of so-called traditional networks which are based on alliances. However, more and more network connections have clusters nature which are increasingly common form of organisational collaboration because of the benefits to participating in it partners – entrepreneurs.

Evaluation of the effectiveness of this co-operation was not a subject to assessments so far mainly because clusters are functioning in Poland for a short period of time.

3. Effectiveness of a cluster's functioning – proposition of the evaluation of the networks' effectiveness

Operational effectiveness of the market must be seen through the prism of the category of effectiveness in question under rules of the economic calculation usage.

Effectiveness should be understood as a relation between a result of an effort while the result should exceed the effort. In situation when those characteristics are different from such relations we cannot speak of effectiveness. Besides, effectiveness is closely related to the efficiency which must be understood as the objective function. Intentional action from the praxeology point of view consist in achieving a target fully or partially but may be also associated with an inability to achieve an objective (action ineffective) or with realising an objective but related to aspirations of another entity (action counterproductive). It is important that determining a level of successfulness precedes the determination of effectiveness. It is known that successful action may or may not be effective but effective action will always be effective. It is important to consider the issue through the prism of economic calculation which suggests that we cannot simultaneously maximise results and minimise efforts. The principle of economic calculation assumes that seeking to maximise results an amount of efforts should be set at a certain level or vice versa – seeking to minimise efforts level of results should be established. Such approach guarantee the proper functioning of the market systems.

The author of this article proposes a simple formula that uses a compilation of scaling methods related to features constituting results and efforts. This al-

lows to separate quantitative and qualitative features so the measurement of effectiveness may be applied to tangible elements that characterise a cluster and factors that cannot be presented quantitatively but have purely qualitative nature.

1. The first step is choosing features that constitute the purpose of action evaluation.
2. The second step is choosing a grading scale, e.g. 5pts – very high, 4pts – high, 3pts – medium, 2pts – low, 1pts – very low, assuming that there is always a level of an effort but the result may not appear so the effort (E) cannot be valued at “0” but it may hover close to this value and even reach it. This assumption stems from the fact that taking any action always bears some level of effort but the result is not always achieved. This approach has its reference in communication theory where it is said that a sender of a message always receives a recipient’s respond even if he/she does not answer because in theory a lack of reaction is also a kind of reaction.
3. The third step is calculating a punctual relation between result/effort if we know that the effectiveness will appear when result/effort > 1 therefore the used scale will provide a numerical value equal to the number contained in the interval $<0,5>$ (for the proposed example) or another if different numerical values respond to the point scale.

We can assume that the result (R) is an element of the interval $<0,E>$ where E determines the upper limit of the point evaluation for the result and the effort is a part of interval $<0,E>$ where E is the upper limit of the point evaluation for the effort.

The calculations enable comparison between elements making up the efficiency of a network which can also be applied to other operations that efficiency should be discovered but its calculation by using specific numerical values is impossible.

The main disadvantage of this method is a subjectivity of the evaluation and selection of features to evaluation and also too general determination of effectiveness. The advantage lies in possibility of indicating the level of efficiency for operations that qualify to eligible evaluations and possibility of comparison between entities operating in the market from the standpoint of the relation between result and effort that proves the existence or its lack of an efficient enterprise.

The following table presents a set of factors (ranking) considered as success factors of the examined cluster (using strategic analysis determining the sector’s success factors – verification for the cluster’s needs).

By supplementing the ranking with evaluation of the effectiveness of certain factors we obtained information that cluster as a whole is achieving the effectiveness (average efficiency $E > 1$) but individual factors determining its success demonstrate a varied horizontally effectiveness, as shown in Table 1.

Table 1. Ranking of success and effectiveness factors of a cluster (X)

No.		Key factors of a cluster's success	Effectiveness (r/e) pts	Weighted value (pts)
1		2	3	4
1	1.1	Relationship between cluster's participants and region	5/3	15
	1.2	Participation of local government units in a cluster	5/1	15
	1.3	Localisation of a cluster in a region with high traditions	5/1	15
2	2.1	Cluster's role for an industry in a voivodeship	4/1	12
	2.2	Local brand	3/4	12
	2.3	Acquiring EU funds for clustering	5/3	12
	2.4	Stimulation of a cluster by a variety of outdoor project	5/2	12
	2.5	Investment attractiveness of an industry	3/5	12
3	3.1	Market size of an industry and an expected growth	5/4	10
4	4.1	Level of interpersonal relations in a region (communes in a cluster)	3/2	9
	4.2	Intensity of competition in cluster's market	3/5	9
	4.3	Level of market awareness of enterprises in a cluster	2/5	9
5	5.1	Regional density of enterprises in an industry	4/5	8
	5.2	Representation of a cluster's founders in the economic environment	4/4	8
	5.3	Program of industry's development in cluster's area	4/5	8
	5.4	Formalise of a membership procedures in a cluster	2/5	8
	5.5	Influence of government increasing the sense of stability among cluster's participants	5/2	8
	5.6	Increasing demand for various types of products from an industry	4/1	8
	5.7	Using modern technology to transfer information	3/5	8
	5.8	Growing role of social, political and other factors in a cluster	3/4	8
	5.9	Level of influence of various projects on a cluster	3/5	8

Table 1 continued

1	2	3	4
6	6.1	Supply for offers mainly from potentially competing companies	5/1
	6.2	Possibility of obtaining diversified products	4/5
	6.3	Capital requirement	3/5
	6.4	Critical mass of a cluster	2/5
7	7.1	Seasonality or continuity of an offer	4/5
	7.2	Innovation potential in an industry	3/5
	7.3	Level of links with science	2/4
	7.4	Dissemination of knowledge about clusters	3/5
	7.5	Mechanisms of exchange information between a cluster and a region	2/5
8	8.1	Compatibility of development directions of national industry products with guidelines of industry's development program in a cluster	3/5
	8.2	Supporting of the national initiating	1/5
	8.3	Promoting lifestyle causing the demand for new products from an industry	4/5
	8.4	Interest in working in an industry	4/5
	8.5	Level of labor supply in an industry	3/5
	8.6	Leader presence in a cluster	3/5
	8.7	Phase of cluster development	2/5
	8.8	Level of foreign offers' competitiveness	5/1
9	9.1	Availability of Polish labour market in an industry for foreign staff	1/3
	9.2	Level of internationalisation of an industry in terms of ownership and organisational	3/5
	9.3	Source of cluster's initiatives	4/5
	9.4	Level of regional products' uniqueness	4/5
	9.5	Influence of government on an industry	4/3
10	10.1	Enterprises' tax rate	4/4

Source: own analysis.

Presented ranking shows that the most important internal factors stimulating a cluster to success are:

- connections between cluster's participants and a region,
- activity of regional government in a cluster,
- presence in a region of major traditions associated with an industry,
- having a local brand of products,
- investment attractiveness of an industry,

Among external factors we must enumerate:

- obtaining funds from the EU,
- stimulating a cluster by various projects.

So, to become successful a cluster needs the flow of funds, investment, government support and usage of regional industry tradition and sales of branded products. The least important to a cluster's success is high taxation of enterprises and fact that cluster initiative and its support have a top-down nature. In such situation we can see that enterprises co-operating with each other will develop in direction marked out by a cluster as a whole. A success of a cluster is the success of entrepreneurs participating in it. A cluster does not allow companies to individually shut in development. Success is the result of a synergy of co-operation in a network.

Linking the ranking of a cluster's success factors with evaluation of those factors' effectiveness we can see that among many evaluated factors, only two affect the efficiency of a cluster in an indisputable manner. These are the participation of local government units in a cluster and the location in a region with high traditions. These factors also have the highest rank in the ranking of success factors. It seems that these two factors are the most important assets of a network which in case of any threat to network's existence can become a support. Whether they be sufficient will prove when a comparison with other similarly evaluated networks will be made.

By making comparisons of several networks using analogous sets of evaluations of their success and effectiveness for this success, we can identify those clusters that augur the best for the future. We can also specify such features that enable a development of a cluster in an efficient way, directed at very precise operations.

In the examined case at the highest efficiency of a network affects an effort to keep influence in local government and that the network operates in an area with traditions mutual to this network's specification. It is also important to use operations of competitors and their offer either domestic and foreign (compare Table 2).

Table 2. Factors of success and effectiveness of a cluster (X)

Key factors of a cluster's success	Effectiveness (r/e) pts	Weighted value (pts)
Relationship between cluster's participants and region	5/3	15
Participation of local government units in a cluster	5/1	15
Localisation of a cluster in a region with high traditions	5/1	15
Cluster's role for an industry in a voivodeship	4/1	12
Acquiring EU funds for clustering	5/3	12
Stimulation of a cluster by a variety of outdoor project	5/2	12
Market size of an industry and an expected growth	5/4	10
Representation of a cluster's founders in the economic environment	4/4	8
Influence of government increasing the sense of stability among cluster's participants	5/2	8
Increasing demand for various types of products from an industry	4/1	8
Supply for offers mainly from potentially competing companies	5/1	36
Level of foreign offers' competitiveness	5/1	
Enterprises' tax rate	4/4	1

Source: own analysis.

4. Conclusions

The above discussion does not included the issues of effectiveness but the author sees the possibility of treating the major factor of success in such way that the target becomes a function of the success factors.

Understanding the effectiveness of a cluster in that way will allow to determine levels of its realisation which in combination with the indicated method for assessing the effectiveness will enable a comprehensive approach to the issue of networking effectiveness regardless of the time of network's functioning. Then we can make the evaluation also in the system of *ex ante* but not in *ex post* which in Polish conditions is still not possible due to the short time of clusters functioning.

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