KNOWLEDGE MANAGEMENT AS A DETERMINANT OF INNOVATION IN ENTERPRISES

Marcin OLKIEWICZ[1]

ABSTRACT
The problem of transferring knowledge from the world of science to an organization is an important issue, faced by the majority of the European Union countries – including Poland. Developed, implemented and improved models require practical use, and on one hand – the ability to transmit knowledge and on the other, flexibility and openness to new, innovative solutions (management). The aim of the article is to show that through knowledge management, the decision-making environment gains the ability to effectively manage the process of stakeholders satisfaction. The research results presented in the article identify a number of internal and external determinants of knowledge transfer as a factor which will stimulate an innovation company.

KEYWORDS: *management, quality, knowledge, innovation, economy*

JEL CLASSIFICATION: *M16, I25, J24, D83.*

1. INTRODUCTION

In the modern economy, which is characterised by globalization, the phenomenon of economic dynamics, competition, time pressure, customer orientation and necessity of innovation implementation, knowledge management plays an important role. The return of American soldiers to their country after World War II was the beginning of another Industrial Revolution – the revolution of knowledge economy. After the War, American government declared that every soldier, returning from the War, can choose any college and field of study.
Knowledge, therefore, is a forum of social thought. It arises in human minds, however, in institutions it also appears in operations, standards, procedures and in the local culture. Knowledge appears in communities and organizations only individually together with a person and only plays some part when communicated. Knowledge becomes useful when transferred. That is why, a skilful transfer of knowledge, creation of social and economic ties, conductive to the development of economic entities and the region, became the object of study of many research teams (Wyrwicka, 2011).
Introduction to the activity practices of businesses requires a lot of effort and courage and is an alternative to standard formulas of the organization's work processes. Potential conflicts, risks, which might arise during the implementation phase, subsequent exploitation, will be compensated with benefits, resulting mainly from the discount of the effect of dynamism as well as creativity of management, supported by an organizational and functional system of new entities. The knowledge is, therefore, needed for determining and realisation of tasks serving to achieve the goals of the organization (Nogalski & Surawski, 2003).
The main aim of the article is to show that through knowledge management, the decision-making environment gains the ability to effectively manage the process of stakeholders satisfaction. Due to

[1] Koszalin University of Technology, Poland, e-mail marcin.olkiewicz@tu.koszalin.pl

the fact that in the future customers will become a society of knowledge, the determinant will be a lack of boarders and its mobility. A look through the prism of knowledge, should allow management to exploit the social potential, and above all, skilfully and efficiently handle the crisis phenomena. The inevitable intellectualization (speed of and ability to intellectually improvise) in the processes of providing services means the increase in the importance of knowledge (Intellectual capital) as a determinant of the increase of satisfaction among stakeholders.
Comprehensive knowledge management (process organization), due to its structure, significantly corresponds to increasing capabilities as well as expectations of the modern consumer in a greater way than classic, previously developed solutions.
Hereby study describes the level of implementation of knowledge in polish and European enterprises. The focus was primarily on the attempt of aggregation and interpretation of justifications based on a query of English and polish literature.

2. THE IMPORTANCE OF INNOVATION

Enterprises operate in a rapidly changing competitive environment characterized by difficult to foresee socio-economic determinants. Entrepreneurs, managers more often seek ways to succeed both in operation and development of an organization, based on the increase in efficiency by strengthening the organizational potential (competitiveness) and in particular innovative operations. It is through innovation that new values of organization are created, generating added value in the competition for economic advantage on a given market. That is why areas of innovative operations include technical and technological, organizational, scientific, social, financial areas etc. The aim of innovation might be, among other things, creation and introduction a new, unique product or service, technological process, mechanism of action (Oslo …, 2005) on a market (model, a systemic activity bringing economic benefits to the organization), introducing temporary or permanent change etc.
The definition of innovation in the literature on the subject is defined and described in a diverse way, in particular as:

- service innovation as a determinant of the existence of service companies, (Berry et al., 2006; Lu & Lin, 2005)
- factor of organization's development and implementation of new products and services, (Hurley & Hunt, 1998)
- thought, behaviour or a thing which is new (the so-called qualitatively different from existing ones), (Olkiewicz, 2014)
- parameter that guarantees the survival or development of an organization, (Schumpeter, 1942)
- relation of innovation and economic growth, (Varspagen, 2005)
- factors which increase the efficiency of an action and the value of the organization, (Tellis et al., 2009; Sorescu & Spanjol, 2008))
- determinant of Human resources management, (Prajogo & Ahmed, 2006)
- determinant of employee recruitment, (Pianta, 2005)
- factor ensuring increase of the organization's capacity, (Nijssen et al., 2006; Jansen et al., 2006)
- the element of the organization's strategy. (Schlegelmilch et al., 1996)

The presented approaches to innovation and innovative activity show a broad spectrum of interaction and application, which is why scientist have not yet completed the identification and terminology scope of research.
In the following part of the study it should be assumed that innovation is the synonym of development and economic growth of an organization as well as a country. What is means is that

one of the basic conditions to ensure high competitive position as well as dynamic and effective growth of the economy and modern enterprises, is innovation. The strength and the pace of innovation development of polish economy is largely dependent on the cooperation between business (enterprises) and knowledge (science and research).
Unfortunately, at present a lack of strong links between business and science is one of the reasons why the potential of both areas used for seeking new solutions and improving the position of national economy as well as competitiveness of enterprises on the global market.
An example of such a lack of innovative expensiveness is shown on Fig. 1

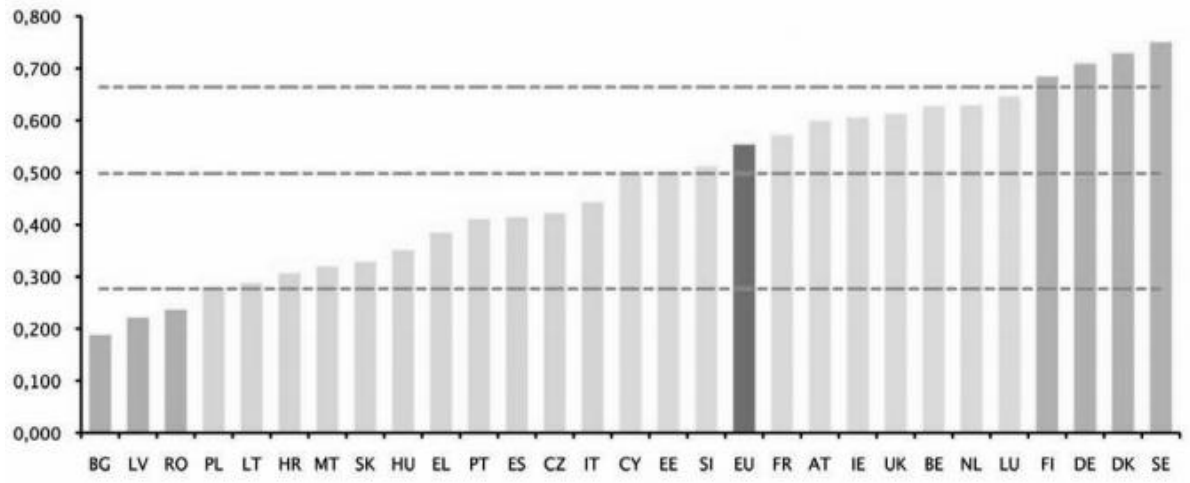

Figure 1. The coefficient of innovation in the UE
Source: adapted from Innovation Union Scoreboard (2014, p.11).

The report prepared by the European Commission "Innovation Union Scoreboard 2014" shows that the coefficient of innovation in Poland is very low. It has to be mentioned that the coefficient of innovation resulted from the comparison of 25 different indicators arranged in categories:

1. support institutions – including: Human resources analysis, students in particular; sources, types, forms of financial support as well as the potential and achievements of participants in the research system and science and research units,
2. actions undertaken by organizations – in terms of relation, cooperation of entrepreneurship with science and research units; creation and implementation of inventions, prototypes, trademarks and patents; the assessment of one's own resources generated and used for research and development as well as investment works involving high business risk,
3. production – in the area of analysis of planned and achieved economic effects, including: generating new workplaces in the *Knowledge Intensive Business Services* sector, utilizing knowledge transfer as well as in the high and medium technologically advanced enterprises providing specialised services or creating products; evaluation of quantity, quality, introduction of innovative process, product or service solutions.

Realisation of the innovation process involves many different fields: scientific, technical, organizational, financial and trade. From the point of view of application of knowledge in practice, where obtained patents are important, Poland also does not look too impressive (Table 1).
Another source, which confirms the inconsiderable degree of innovation in Poland, might be the World Intellectual Property Organization (WIPO) which states that Poland step by step develops practical creation and application of innovation in the economy.

Table 1. The number of patents received in the years 2010-2013

Country / Year	**2010**	**2011**	**2012**	**2013**
Sweden	10585	10994	12165	12267
Denmark	3932	4263	4499	4880
Germany	70652	72804	77077	81603
Poland	1588	2208	2193	2734

Source: http://ipstats.wipo.int/ipstatv2/ipstableval.

The current situation is a result of limited funds used for research, presented in table 2.

Table 2. Barriers of introducing innovation in organizations

1.	Lack of funds	71.70%
2.	Risk of failure	52.80%
3.	Lack of qualified personnel	44,70%
4.	Difficulties connected with patent protection	37.90%
5.	Insufficient technical resources	34.50%
6.	Risk of failure	32.40%
7.	Creation of standard products	16.90%

Source: own study (Olkiewicz, 2014)

Innovation is therefore treated as a continuum of change, at one hand simple modifications of already existing products, processes and practices and on the other new products and processes. In this process knowledge transfer is an important factor; in particular the quality as well as the ability to use it.

Whereas innovation capital refers to the renewal of skills and the effects of innovation in the form of protected commercial rights, intellectual property and other intangible assets and talents used for creation and introduction of new products and services on the market. The capital of processes are those work processes, techniques (e.g. ISO 9000) and employee schemes, which increase and strengthen the efficiency of production as well as delivery service.

In a modern enterprise, the focus is on a man (the basis for the creation of the human capital). Only by this inspiration the will, needs, knowledge is generated, then processed, transmitted and disseminated through interpersonal contacts within the organization. Therefore, the effectiveness of an intelligent company, which creates stable base for knowledge management, determines the employees readiness to learn and to acquire new qualifications, teach to forget old habits and procedures, to share the knowledge and skills they possess with others (exchange of information) (Sokołowska,2005). The intellectual capital consists of: (Ujwary-Gil, 2009)

- concrete knowledge,
- experience, technology,
- customer relations,
- professional skills.

In many organizations issues concerning intellectual capital are still not well known. Today's enterprises face new challenges. The product, by itself, whose characteristics can be easily copied, does not play such an important role anymore: competitive advantage is based on knowledge. That is why introduction of improvements in the intellectual capital management system lays in the best interest of every company.

There is no doubt that proper motivation of people to use their own knowledge, competence and creativity, has a significant impact on the innovation and competitiveness of the enterprise as well

as contributes to the increase in the market value (Olkiewicz, 2006). Knowledge used by people becomes a support structure for products and services, which we define as *knowledge rich products* (Bober, 2014). In addition, the promotion of innovation is also one of the key areas of public aid financed by the European Union. (Widera & Szewczyk, 2011)

3. IDENTIFICATION OF KNOWLEDGE MANAGEMENT IN AN ENTERPRISE

The rapid pace of the market transformation and activities of organizations, conditioned by the development of the use of knowledge through actions, has a positive effect on the process of creating a knowledge-based economy. New techniques and technologies, which are the result of the development of science, enable to gain markets, introduce new products and to improve production processes as well as methods of management. (Dolińska, 2010)
In the era of rapid economic growth based on the development of information technology, knowledge, intangible assets – information has become a desirable market product. Modern economy, relating on qualitative and quantitative changes, uses the quality of human labour, knowledge of structural transformation of the organization, which ensures its success. Human resource is the market's value of the organization, in particular its knowledge, competences, qualifications, skills, values, attitudes, abilities etc. It can be said that we are living in an era of *knowledge society* (Jemielniak & Koźmiński, 2008), in which individual values, often supported by information and communications technology, become determinant of the success of the organization. Continuous focus on the improvement and satisfaction of the internal and external customer is achieved through a systemic approach sealing the customer-organization relation (Olkiewicz, 2012).
This means that organizations should improve the innovative potential developed in the past, in order to lay foundations to generate new skills, abilities and knowledge that constitute the strength of the organization development. It is therefore necessary to increase: ability to introduce new knowledge, ways to change the perception of work, quality verification of manufactured goods and services to potential customer's needs to achieve satisfaction etc. In other words, undertaken actions have to lead towards generating and usage of knowledge in aspects of research and development as well as science and business.
In order to reach this effect, one has to often change the perception of work as well as the way in which the organization operates, which is illustrated in table 3

Table 3. Traditional organizations and knowledge-based organizations

Specification	Traditional organization	Knowledge-based organization
Focus	Focus of attention mass production of material goods	Knowledge design and technology, information and knowledge
Strategy	Strategy Passive and reactive, lack of swift response to changes in the environment or delayed reaction	Proactive, anticipates changes in the environment and prepares the organization and creates action plans to exploit them, to seize the opportunity
Dominant resource	Physical and financial capital	Knowledge and intellectual capital

Culture	Culture Conducive to the avoidance of uncertainty - low tolerance of uncertainty combined with the desire to reduce uncertainty and action in conditions of low risk, the growth, efficiency, standardization, organization values include control.	High tolerance of uncertainty by the social environment involving the willingness to operate in a deficit of information, organizational values include customer service, diversity, innovation, relationships
Approach to uncertainty	Atypical events as threats	Atypical events as a source of inspiration
Modes of operation	Structured and stable, adherence to stereotypes and reject conflicting information, focusing attention on the efficiency of the processes taking place within the organization	Rejection of stereotypes
Rudimentary knowledge	Highly specialized	Interdisciplinary
Approach to change	Emphasizing stabilization role of organization, approaching change as a threat, forced changes are introduced periodically, at a certain moderate-to-low pace and in a manner easy to follow	Orientation on change, sudden changes, high-paced and often radical, continuous process of improvement, policy rule in changes is an organized rejection of the past
Power relations	Stable, hierarchical, based on the emotional aspects of executive authority	Heterarchy, instability of power
Dependence on the leader	High dependence on the leader	A large autonomy supported by the knowledge and professionalism
Role of management teams	Optimization of quality and productivity, the application of raw energy, repeatable operations, processing resources and innovation, separation and specialization of work and organization	Quality = Productivity = adaptability and response, the application of ideas, searching for innovation, working knowledge and ability, a holistic approach and the integration of work and innovation
Relationships between people	Stable, minimal mobility, a sense of belonging	High mobility thanks to the rotation applied, the harmony in the interaction
Organizational forms	Permanently structured	High dynamics of variation
Organizational structure	Traditional, focused on organizational functions depending on hierarchical dominance, emphasis on control	Network of cooperatively related self-governed parties focused on processes, informal mechanisms of pressure (communication, participation, culture)

Boundaries	Clear and distinct between the functions, organizational units and organizations	Blurred, fuzzy both between functions and organizational units and organizations
Cooperation with suppliers, co-operators and customers	Lack of close ties of cooperation, price competition between suppliers and co-operators, lack of response to customer preferences	Close partner cooperation, flexibility in tracking quality throughout the supply chain, high level of customer service
Dominant communication mode	Vertical, formalized	Horizontal, informal
Participation in the group	Exclusive and persistent	High mobility, temporary participation
The predominant type of personal identity	Group identity personal identity Focus on transactions	Individual identity, Focus on relationships

Source: adapted from Skrzypek & Senkus Innovation Union Scoreboard (2014, p.175-176)

Effective management requires to define the definition of knowledge management as well selecting appropriate methods of measurement. A diagnosis allows to identify not only those intangible assets that are best developed but also those, which even though exist, do not hold a significant value. Thanks to this, the management has a fuller picture of assets based on knowledge, which allows to create proper strategies for their further development or creating and acquiring, selling and sharing (Kasiewicz & Rogowski, 2006)

4. KNOWLEDGE TRANSFER AS A FACTOR OF STIMULATING THE DEVELOPMENT OF AN ORGANIZATION INFORMATION

Innovative European Union countries show a certain number of common strong points in regards to national research and innovation systems, which include the key role of innovative entrepreneurship and higher education. In these countries there is also a well-developed education sector as well as close links between industry and science (Hollanders & Es-Sadki, 2014).
Knowledge transfer is an acquisition of knowledge by the enterprises concerning new, not used before, technologies, solutions, products, services. For this reason, especially taking under consideration the aspect of acquiring technology and innovative solutions in terms of organization, logistics or management systems, knowledge transfer is closely connected with broadly understood innovation – in practice, every economic activities leading to implementation of innovation, are called *innovation activities* (Jasińska-Biliczak, 2013). Investments in innovations are key activities, which in the long run result in the economic growth.
Creating opportunities for the organization's development in a rapidly changing requirements of market's stakeholders is possible, inter alia, by an effective and efficient implementation of innovations while making a maximum use of the intangible resources like knowledge, experience, competence etc. In essence, the most important factor to success is the knowledge transfer process as well as the quality of the knowledge transfer. The process of knowledge transfer in the science-business area include: acquisition of knowledge (Ramayah et al., 2013), knowledge sharing (Liebowitz, 2012) and turning knowledge into decisions (United …, 2007). An adequate way to transfer high-quality knowledge with high usability causes the creation of a mechanism, which creates dependency between sides while generating added shared value.
In the literature on the subject one can find it under the term "*knowledge sharing culture*". Knowledge transfer is one of the elements of knowledge management, meaning set of processes, which enable the creation, share and usage of knowledge for the effective implementation of tasks by the enterprise.

Whereas technology transfer determines the transfer of a specific technical, organizational knowledge and the know-how, with the aim of economical (commercial) use. Such knowledge transfer from science to business is called commercialisation of knowledge with the aim of supplying the market with technologies (Koźmiński & Jemielniak, 2011).

It should be noted that knowledge sharing culture results from individual characteristics of subjects participating in the transfer process. Through the analysis of the polish market on knowledge transfer, it can be stated that the main player are:

1. Bodies of the institutional environment:
- the government,
- science (science and research organizations) – educational institutions: universities, research institutes, laboratories, research centres or research and development departments located in companies. Units generate ideas for new technological and organizational solutions, laying foundations for new knowledge, not dealing with commercialization of innovations,
- institutions of support – entities stimulating innovation activities: incubators, technology transfer centres, science parks, mediating and supporting as well as aiding implementation of innovation processes through various types of pro-innovation services,

2. bodies from the sector environment:
- innovator, i.e. innovative enterprises that make an effort to transform knowledge and theoretical ideas into ready for sale technologies, products or services,
- specialised entities managing capital funds: *venture capital*, business angels, seed capital funding, which are responsible for providing tools enabling financing risks associated with innovative processes,

3. bodies from the market environment:
- consulting entities – providing advisory services, offering assistance in the realization of the process of commercialization of innovation,
- entities financing pro-investment activities.

Universities play a particular role in the subjective system by providing the *know-how*, technical knowledge as well as economical, managerial, social, sociological etc. Universities as centres of research and development in terms of research create co-operation with entrepreneurships, among other things in forms of: (Kuczmarska & Pietryka, 2010)

- ordered research and development work (commissioned research),
- co-operation in joint research initiatives,
- direct investments by creating so-called spin-offs and spin-outs,
- trading patents, the know-how and licenses,
- the transfer of acquired through teaching practice knowledge to professional practice,
- practices, internships and the exchange of research workers in enterprises,
- creating various kinds of structures and network systems connecting research units and enterprises (clusters).

It should be noted, however that every innovative activity is burdened with risk as well as difficulties, which include: (Bromski red., 2013)

- lack of adequate legal regulations,
- lack or very limited trust between the parties,
- limitations of the commercialization of knowledge,
- insufficient development of structures to commercialize innovations,
- disinformation or low level of information about possibilities of co-operation,
- high costs of patent protection,
- limited financial resources - both governmental and commercial enterprises,

- small number of satisfactory effects of previous co-operation.

Limitations resulting from the groups listed above cause that entrepreneurs define their interests and expectations in a very precise manner. Thanks to the properly conducted pre-analysis it can be stated that entrepreneurs, in the framework of knowledge management based on innovation, expect from scientific circles very high level of knowledge:

- basic, guaranteeing proper functioning of the organization,
- advanced, enables building and achieving a competitive advantage,
- innovative, providing significant growth as well as dominance in market or production.

In case of polish entrepreneurs, opportunities were created after the accession to the European Union. Activities, associated with creating appropriate polices towards entrepreneurship, were introduces and as a result Poland has a free market (European), higher quality of: work, production, goods etc.
Technological development promoting higher qualifications – *Skill-Biased Technical Change, SBTC*, inclines to the adaptation of observed changes, consistent with the hypothesis of technological development promoting higher qualifications – *SBTC* (Acemoglu, 2002; Allen,2001), giving employees, who use new technologies or working in industries of higher degree of innovation, benefits in form of higher wages. It is also a determinant for establishing task forces (Bober, 2012).
Whereas: *Intellectual capital measurement as well as balanced reporting are an important milestones in the transition from the industrial age to the knowledge economy (...). This extended, balanced accounting and reporting model results in a more systematic description of enterprise's ability and the potential to transform intellectual capital into financial capital* (Visualizing …, 2001).

5. CONCLUSIONS

In the turbulent environment of the organization there are a number of determinants of internal and external characteristics enforcing pro-effective actions, which through integration with comprehensive knowledge management, should contribute to the increase in the efficiency of provided services as well as in products, which satisfy both internal and external customers.
Presented reflections enrich the literature on the subject with the analysis of the process of knowledge management in organizations depending on external, internal and process conditions. They also draw attention to management high qualifications, their role and the level of maturity of the knowledge management process.
In the era of knowledge-based economy, intangible assets become more important that physical capital. The analysis, which were carried out, showed that the importance of intellectual resources are starting to be recognized by the people managing organizations in Poland. Therefore, it is difficult to expect actions, which are connected with deliberate and effective knowledge management as well as measurement of its impact on the functioning of the organization, to be undertaken. If the intellectual capital remains unnoticed in the company, its importance in shaping the value will also be unnoticed (Arthurs & Busenitz, 2006)

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