

## TRENDS OF HUMAN RESOURCES DEVELOPMENT FOR KNOWLEDGE BASED ECONOMY: TOWARDS COMPETENCE AS THE SYNERGY OF KNOWLEDGE, ABILITIES AND SKILLS

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### Abstract

In the 20<sup>th</sup> century the globalization and fast development of information and communication technologies influenced the rising of economy which is based on knowledge. In this contemporary economy the knowledge, its creation and usage becomes the most important factors which determinate the successful competitiveness of countries. The knowledge is broad concept and this concept involves knowledge as well as knowing. It should be emphasized that this scientific paper is mostly oriented to knowing which is reflected by human resources' competence.

In this paper it is stressed that the engine of economy which is based on knowledge is human resources that are able to create, disseminate and use new knowledge in their activity. The emergence of knowledge – based economy transformed the structure of labour market and highlighted new requirements for the human resources' competence. The special attention is given for the highly - skilled workers, that are able not only to work in the ordinary environment, but to create new knowledge as well.

This paper outlines the core trends of human resources development for knowledge –based economy. Authors using qualitative analysis evaluate the crucial role of the quality of human resources for the economy. This paper focuses in particular on the question which specific abilities, generic and transferable skills as well as competence drive knowledge – based economy. Authors determinate the core ways for training and development of human resources quality, which could interconnect abilities, skills and competence for the creating new knowledge, innovative products and services.

### Keywords:

**Human resources, knowledge – based economy, abilities, competence, skills.**

### Introduction

In the contemporary economy knowledge and knowledge based activity becomes the necessity for countries which strive to be most competitive in the world. Impact of knowledge to the development of economy is evident and crucial. Most importantly, the transition towards a global economy, based on acquisition and application of knowledge depends extensively on quality of human resources.

The importance of human resources in economy of knowledge has been analyzed in many scientific papers and official documents. Although Adam Smith quite early (1776) envisaged the importance of individual's abilities and skills for the wealth of societies, the detailed analysis of human resources influence to the economy started only in the XX century (Becker (1962, 1964), Schulz (1961, 1962), Mincer (1958, 1962, 1974)). In the contemporary economy human resources were recognized as the key element for knowledge – based economy development

(Laroche (1998), Malhorta (2000), Stickley (2005), Melnikas (2003) et al.).

In rapidly changing world the importance of knowledge, abilities and skills in every human endeavour should be observed. There is broad consensus in scientific literature that quality of human resources becomes the main element for economic success and help for individuals achieve social well – being within their communities, regions and nations. The highly - skilled human resources is the main axle of organizations because on these resources depend the processes of knowledge creation, usage, dissemination and commercialization.

In scientific papers there are still *open questions* – what is the content of competence of highly – skilled worker and what are the ways for obtaining of best competence. This publication strives to find answers to these questions.

### Research purposes:

- to highlight the role of highly – skilled human resources for the development of knowledge – based economy;
- to analyze the content of human resources competence;
- to determinate the ways for obtaining the best competence.

**Research methods:** the analysis is made upon the scientific literature and research in this field.

The article consists of three parts. First part of article highlights the importance of human resources quality for knowledge – based economy. Alongside, the requirements of the contemporary economy for the quality of human resources are discussed. The second part is dedicated for the analysis of highly – skilled human – resources’ competence content. The last part of article is devoted to the discussion on the question – what are the best ways for developing highly – skilled workers competence.

### Exploiting possibilities of knowledge – based economy – new challenges for quality of human resources

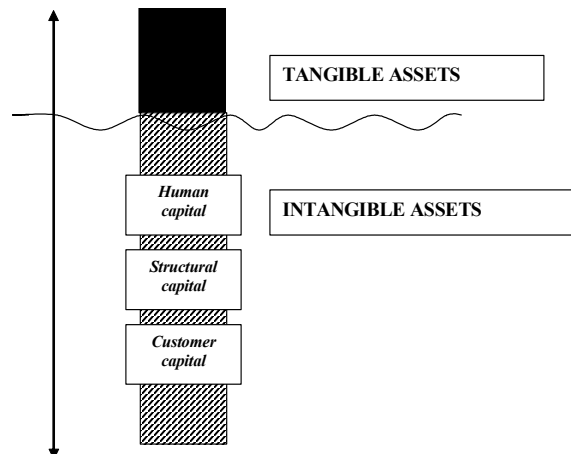
The few last centuries have witnessed several fundamental transformations and each of these transformations had fundamental implications for nature of society. Under the influence of *globalization* and *fast development of technologies* (especially information and communication technologies (ICT)) the knowledge, its usage and dissemination become the most important factors for the successful activity. In contemporary economy companies are not orientated only to physical assets. Daugėlienė R., Volodzkienė L. (2005) stressed that human resources, their knowledge, are the most valuable resource of modern society, more important than natural resources and accumulated asset.

Very important becomes intellectual capital (i.e. *intangible assets*) which consists from human capital (knowledge of organization’s people, talents, skills), also structural capital (patents, databases, networks and etc.) and customer capital (relations with customers and suppliers)(see figure 1). According to this, quality of human resources becomes a key determinant for productivity. K. Kriščiūnas and R. Daugėlienė (2006) highlight that the individual knowledge is the background of organization’s knowledge and the part of organization’s knowledge as well. Individual knowledge and organizational knowledge have the interdependent relationship.

The economy which is based on knowledge provides new opportunities and also new challenges, especially for quality of human resources. Human resources are the main axis of knowledge – based economy participating in processes of:

- *knowledge acquirement* (by learning);
- *creation of new knowledge*;

- *configuration of knowledge, usage of knowledge* (knowledge based activity);
- *dissemination of knowledge*.



**Figure 1. The Intellectual Capital Model**  
(Stewart, 2003)

The organizations, acting under the conditions of contemporary market, should be orientated to the workers and their knowledge, skills and qualification (Mathis R., Jackson H., 2006). Pfeffer J. (1998) stresses that under the conditions of hyper competition, workers are the main recourses and guarantee for business success. Within organizations, and much more, within economies, the human resources are being increasingly recognized as a critical asset.

In knowledge – based economy it is needed to consider new category of workers – *knowledge workers*. The term “knowledge worker” is coined by Peter Drucker in 1959 and means one who works primarily with information or one who develops and uses knowledge in the workplace. Davenport T.H. (2005) highlights that the primary purpose of knowledge workers’ jobs involves the creation, distribution or/and application of knowledge. Nowadays the knowledge workers could be defined the workers who have theoretical knowledge, high professional education, are involved in knowledge management and, finally, have high competence. Therefore, in knowledge based economy it is necessary to analyze the highly – skilled workers, because this category of workers plays a key role in the generation of new knowledge. Highly - skilled workers, first of all, are the knowledge workers. This category of workers have strong basis of theoretical knowledge, high professional education. In their activity highly – skilled workers not only acquire new knowledge or are able to configurate it, but they also are able to create new knowledge through research as well as adapt these knowledge in their activity. In contemporary economy the demand of these workers is rising. Marios – Ines Bastos (1999) points out that

increasing demand of highly – skilled workers in labour market was influenced of their ability to improve their skills continually and to conform to the rapid changing environment.

Highly – skilled human resources benefit to a company could be a form of developing of business intelligence, increasing value of intellectual capital. Within organizations highly – skilled workers tend to be closely aligned within the organizations growth prospects (Davenport, 2005).

### **Towards competence as a synergy of knowledge, abilities and skills**

The meaning of competence is not so easy educed because of its complexity. Competence is seen as one of the most valuable resources of individuals and organizations, but many scientists agree, that it is not very clear how the term of competence is understood and how it should be defined (Paloniemi S., 2006). The concept of competence was analyzed by Schoonover S.C. (1998), Martinkus B., Sakalas A., Neverauskas B. (2002). According to the competence definitions analysis, competence is not only the excellent performance in the particular work conditions using abilities and skills, but also concept of competence involves personal effectiveness.

Streumer and Bjorkquist (1998) in their papers emphasized that there are two understandings of competence – British and German. In British case the competence is understood as the individual's capability to perform the tasks. In the German case the competence is understood more broadly. According to this understanding, competence is not only knowledge and skills, but content of competence includes the professional identity. Paloniemi (2006) emphasized that in addition to knowledge and skills, attitudes and aptitudes are part of professional competence.

The other question - what kind of abilities and skills should acquire highly – skilled human resources for the best competence? To answer this question it is needed to make distinction between the abilities and skills. Abilities are usual understand as the natural talent. They are developed in the early of life and are not taught in university. For this reason abilities will not be analyzed in this scientific paper, although the authors do not deny their importance for the individuals.

Skills can be obtained and developed in universities or in workplaces. Their importance in the content of highly – skilled workers competence is growing and growing up. Skills can be generic and specific. Generic skills are fundamental for successful functioning. Usually this kind of skills are related to basic language and quantitative literacy and, more broadly, to the ability to process information and use it in problem – solving and in learning. Specific skills are usually related to the operation of particular

technologies or production processes. Specific skills are more difficult to develop than generic skills.

Analysis showed that for highly – skilled workers acting under the conditions of knowledge – based economy are important:

- Personal effectiveness;
- Critical thinking;
- Communication skills;
- Networking and team working;
- Lifelong learning.

Below there is given detailed analysis of the main skills of highly – skilled human resources.

As it is pointed out above, for the competence of highly – skilled workers is very important the *personal effectiveness*, because the competence is not only knowledge or skills. The category of personal effectiveness consists from:

- Self – discipline;
- Individual motivation;
- Initiative;
- Features of leadership;
- Awareness of self limitation;
- Career planning (career management);
- Training needs (life long learning).

Above mentioned skills are necessary for highly – skilled workers in order to achieve their goals.

Furthermore, the highly – skilled workers should obtain and develop the skills of *critical thinking*. Critical thinking is one of the important skills for highly – skilled human resources. It should be pointed out that critical thinking is very complex process. Critical thinking is promoting by teaching and, especially, by research making. In could be highlighted that the workers with strongly developed critical thinking see the problem where the others can not see the problem yet. In this case, workers with critical thinking easier see the new possibilities, new markets, new niches and etc. The highly – skilled human resources should have research skills and understand the research techniques, research environment as well as research management (time management, prioritization and etc.). Under the conditions of knowledge based economy there is important not only the making of research, but also commercialization of research results.

Other very important bloc of skills is *communication skills*. Communication is the key – the abilities to interact effectively with a variety of individuals and groups to facilitate gathering, integrating, and conveying information in many forms. Taking about communication skills, there should be defined to types of communication - internal and external.

Effective communication starts with the skills of listening, speaking and questioning. *Internal communication* is based on the communication with

the others specialists. It is very important to be able to prepare well -structured scientific and subject text, documents as well as to present them for the colleagues or broader auditorium. *External communication* is based on the ability to communicate with the mass media, politicians, broad society.

The specialist working under the conditions of globalization can not work separately. Therefore it is necessary to consider the *teamworking and networking*. Teamwork has become an important concept for human resources. Teamwork is essential for competing in today's global market and, according P. Vanagas (2004), from the work in team can benefit and organization, and every worker. Teamwork is the ability to work together toward a common vision, to direct individual accomplishments toward organizational objectives. In a teamwork environment, people understand and believe that thinking, planning, decisions, and actions are better when done cooperatively.

Additionally, the emphasis should be placed on the importance of *lifelong learning*. The lifelong learning became the object of discussions and scientific papers. The importance of lifelong learning is emphasized and in the documents of European Union. In 2001 the European Union adopted the Communication on Making a European Area of Lifelong Learning a Reality in which lifelong learning has become the guiding principle for the development of education and training policy. The Communication sets out concrete proposals that aim to make lifelong learning a reality for all.

Lifelong learning is a critical approach to the professional development. The knowledge – based economy characterizes by the fast changes in all fields of life. In order to be competitive in the labour market the employees should react to these changes very adequately. The person should renew the knowledge all the time, constantly, because it is getting old very fast. For this reason it should be aimed for bigger importance of lifelong learning.

The emerging of lifelong learning concept reflects that the changes are the characteristic of contemporary economy. The persons can act successfully in such environment only if they permanently improve knowledge and develop their skills.

Lifelong learning is important because provides:

- Continuing professional development;
- Voluntary acquisition of new knowledge and skills.

Highly – skilled workers should understand the importance of life - long learning for the development of their abilities and skills because the knowledge, the abilities and skills of highly – skilled workers are developed through lifelong learning.

For the competence of highly – skilled workers the important role plays the experience. The experience can be understand as a learning through practical doing. Gained experience is a prerequisite for the best competence of highly – skilled human resources.

In figure 2 there is shown the evolvent of the competence content of highly – skilled workers.

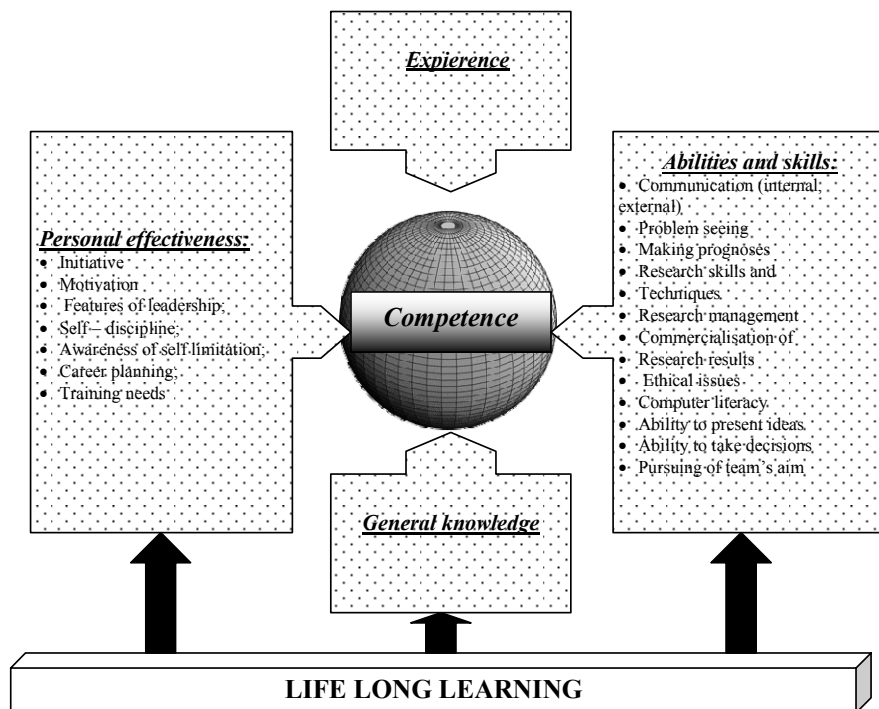


Figure 2. The competence content of highly – skilled human resources

It should be stressed that the interplay of knowledge, abilities and skills gives the synergy effect. The synergy of knowledge, abilities and skills influences the success and quality of highly – skilled workers activity. The competence is a cluster of features of character, knowledge, abilities and skills. The content of competence which is pointed out above is necessary for the highly – skilled workers. It should be emphasized that the successful activity of individual has the direct influence for the organization success.

### Ways towards the Best Competence for Knowledge – Based Economy

Looking at whole cluster of knowledge, abilities and skills which are needed for quality of human resources acting in knowledge – based economy, it is very important to answer the question what are the ways for obtaining the best competence. The mentioned abilities and skills could be achieved through four different channels:

- Discipline modules;
- Specific modules;
- Learning by researching;
- Participating in conferences and seminars.

*The discipline modules* provide general education core i.e. generic knowledge.

Besides the generic knowledge, it is needed to have specific knowledge and skills, for example project management. *The specific modules* provide

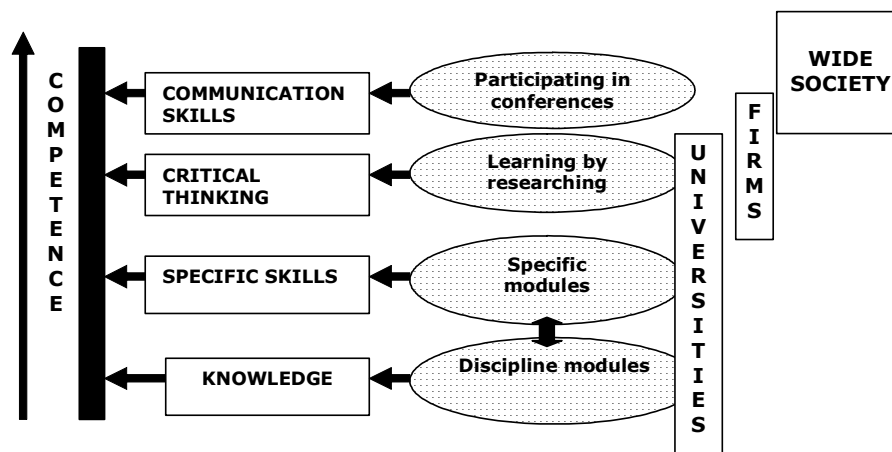
these specific knowledge and skills. It should be emphasized that discipline modules and specific modules should be very closely related.

*Learning by researching.* Research and development are very important stages for innovation processes. Specialists acting in knowledge based economy have to understand importance of research and development and to have good command of research and development methods in their specific area (Lapina, Koke, 2006). It is very important to understand that research is one of the best ways for learning and development of critical thinking (i.e. learning by doing).

It should be mentioned that for highly – skilled human resources participating in research plays very big role. They should be involved not only in frontier research which develops the critical thinking of highly – skilled human resources. Highly – skilled human resources should be involved and in the practical research which provides the skill to transfer obtained knowledge to final product.

*Participating in scientific debates* (for example, seminars and conferences) provides communication skills. The attendance in conferences and seminars are essential for highly – skilled human resources. They should be encouraged to present their work at conferences and publish the results of research.

In the processes of providing of mentioned knowledge, skills and abilities, the main role plays universities, business and wide society (see figure 3).



**Figure 3. Main trends of best competence development**

Universities role in these processes is clear – they must provide the high quality education which is based on research. Universities should ensure the high level education, provide best opportunities to generate as well as develop new ideas and entrepreneurial skills, risk taking and creativity. Only with help education could be developed well educated human resources. Universities should concentrate on the ensuring the accessibility of higher education and the

permanent improvement of human resources competence, enhancing the efficiency of higher education institutions and guaranteeing of the quality of higher education. Science and research should be totally integrated. Universities should not only provide knowledge, but develop the transferable skills of students. Universities commit their responsibility in accomplishing their fundamental mission – knowledge creation, concentration and usage – for the

programmes of studies and lifelong learning, staff and human resources, for the quality of research and innovative activity (Kriščiūnas K., Keršytė J., 2006).

Furthermore, business should actively participate in the processes of human resources competence improving. The business sector should promote the learning by researching. Wide society should ensure the providing of communication skills.

The findings shows, that the universities, authority, industry and business, society at large should concentrate towards strengthening the knowledge, abilities and skills providing for human resources.

### Conclusions

1. The analysis of new and rapid changes in the economy and demand of knowledge based economy forms new requirements for the quality of human resources development for new environment of knowledge.
2. The competence of highly – skilled represents a dynamic combination of knowledge, abilities and skills. The best competence of highly – skilled workers is based on interplay of knowledge, abilities and skills.
3. New generation of highly – skilled specialists for the successful activity in knowledge based economy should demonstrate personal effectiveness, critical thinking, features of team working, communication skills and have lifelong learning needs. Contemporary economy requires the flexible and initiatives specialists.
4. University plays big role in the human resources development. University must not only give for students deep and broad knowledge, but develop the skills and teach them to be critical.
5. The universities' studies should concentrate on only on the providing of knowledge, but also, on providing and developing skills for accumulation and usage of knowledge.
6. It should be stressed that development of human resources for knowledge based economy overpasses university's borders. It is needed strong collaboration between universities, industry and wide society. All of them are responsible in the development of highly – skilled human resources for knowledge based economy.
7. Private sector must take part in the development of human resources and support them.

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