

BUSINESS'S VISION ON COMPETENCE OF RESEARCHERS IN KNOWLEDGE – BASED ECONOMY

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Abstract

Fast changing market's environment is causing the specific requirements towards the human resources. In the economy which is based on knowledge the special attention is given for researchers which create new knowledge, products, processes, methods and systems. These specialists play the crucial role in the current economy.

Alongside the universities and research institutions, especially demand of high competency researchers is felt in business's sector. This sector becomes the important source of employment for researchers. However nowadays situation shows that Europe has a shortage of researchers, especially in business sector. The main scientific problem is the finding of the ways, how to liquidate this shortage.

This paper particular focuses on the question what competencies of researchers are distinctive for business sector acting in economy based on knowledge and achieving excellent performance characteristics. Authors outline the significance of research for business's success using quantitative and qualitative analysis, experience of such organizations as "Nokia", "Philips" and others.

In this article there are constructed the recommendations for the education and training system which would be able to respond to ongoing changes and prepare the competent specialists which, without any barriers, should be absorbed in the business sector.

Keywords:

Knowledge – based economy, human resources, researcher, business sector, competency.

Introduction

The 21st age is the period of radical transformations in many spheres. These transformations cause many changes in various fields of human life. A lot of challenges are connected with the rising of the economy which is based on new knowledge creation, dissemination and usage. In this new economy knowledge is recognized as the main key for the productivity, growth and competitiveness.

In contemporary economy the business sector is facing the new rising challenges as well. The economy of last decades of industrial period was characterized as stable, slowly changing and predictable. Nowadays the business organizations act in global, very fast changing and complex environment. According to this, business companies should become more flexible, more open and faster react to rising challenges. Soete (1996) emphasized that important challenges arise from this shift in the focus of the economy towards knowledge – based products. The knowledge based

activity should be strong firm in the business sector and in industry as well.

Reacting to the changes, the customers needs are changing as well and for this reason the traditional market segments are disappearing or fragmenting and business organizations needs to adjust their products accordingly (Goffin K., Mitchell R., 2005). Under such conditions the products or/and services also become more complex, based on knowledge, high value added and usually trans -/ multi - disciplinary. In order to stay competitive the business organizations should pay attention to the research. Research becomes inevitability for all business organizations which strive to act successfully in contemporary economy.

In order to meet the emerging challenges, business organizations need relevant educated and trained human resources. The importance of human resources and their competency for the competitiveness and growth was emphasized in many scientific works (Laroche (1998), Malhorta (2000), Melnikas (2003) and etc.). Fast developing market is causing specific

requirements for the human resources, especially for the universities' graduates. Furthermore, the business sector forms new and specific requirements for the human resources, especially for the researchers.

Although it is recognized that highly – skilled human resources in research are the cornerstone for all Europe's competitiveness, the segment of researchers is not enough strong in Europe and it is felt the shortage of researchers especially in business organizations. Identification of business sector requirements for the competency of highly – skilled human resources and especially for researchers is a key for their sustaining competitiveness in the international market. In scientific works there is the open question - which competencies of researchers are distinctive for the business sector acting in knowledge - based economy? This article strives to find the answer to this question.

Research purpose: to identify the list of abilities and skills of researchers which are important for business sector in contemporary economy.

The tasks of the research were set as follows:

- to present the content of competency of human resources acting under the conditions of knowledge based economy;
- to highlight the researchers importance for business organizations in contemporary economy and analyse the business's sector requirements for researchers;
- to emphasize the universities role in the preparation process of researchers for knowledge based business.

Research object: researcher's competencies for business sector.

Research methods: the analysis is made upon the scientific literature and research in this field as well as statistical data.

The article consists from three parts. First part presents the understanding of the content of competency of human resources in knowledge based economy. The second part of article shows the researchers situation in business sector. In this part there are crystallized out the business sector vision on researchers' competency. The last part shows the universities role preparing researchers for business.

The Content of Competence - Is There Something New?

The emergence of knowledge based economy has raised new wave of discussions about the demand for high level competency. The conception of competence is not easy to describe because of its complexity. There are many scientific works on this analysed topic all over the world (Schoonover S.C., 1998; Streumer, Bjorkquist, 1998; Martinkus B., Sakalas

A., Neverauskas B., 2002 and others). The scientist unanimously agreed that the competence of human resources is the dynamic combination of knowledge, abilities and skills. Learning and acquisition of competence and skills are the most important tools for the achieving individual and organizational goals (Niemi, 2003).

The content of competency in the economy which highlights the knowledge is remarkably changed comparing with previous decades. New and rapid changes in economy, the growth of new economic activities, especially in such fields as manufacturing and services require the specialists with broad content of competency.

Keršytė J., Kriščiūnas K. (2007) in earlier research according to the works of other scientists formatted the model of competence which is required for highly -skilled human resources acting under the conditions of knowledge emphasizing economy. The authors identified four important blocs from which consists the content of competence:

- *general knowledge;*
- *personal effectiveness;*
- *abilities and skills;*
- *experience.*

Keršytė J., Kriščiūnas K.(2007) emphasized that human resources competence is a synergy of knowledge, abilities and skills and for this reason is very important to develop all of these blocs.

General knowledge is important for every specialist, however in nowadays economy it is not enough to have broad portfolio of general knowledge obtained. Notably, more and more important become personality type and other abilities and skills.

Other significant bloc identified by scientists is *personal effectiveness*. Personal effectiveness includes self – discipline, individual motivation, initiative, features of leadership, awareness of self limitation, career planning (career management) and training needs (lifelong – learning).

Rapid changes cause an increased need for broad portfolio of *abilities and skills* of employees. Scientists agreed that abilities and skills are fundamental for successful activity. There should be made distinguish between the conception of ability and skill in order to avoid misunderstandings. Abilities are given by birth and they are developing in kindergartens and schools. The skills are developing through the programmes in universities. They are acquired purposefully for specific activity. The bloc of skills includes communication's skill, the having of critical thinking, abilities to work in teams and networks. These skills are acquired and developed through all life.

In scientific works it is often declared that *experience* (learning through practical doing) is the

prerequisite for the best competence of highly - skilled human resources. Archer W., Davison J., (2008) emphasized that experience is vital to enhancing graduates employability skills.

Rapid changes cause an increased need for *lifelong learning*. In the 21st century in order to adapt to continuously changing opportunities and market demand, employers need to learn though all life. Lifelong learning is important for highly –skilled human resources as well because it is a main key for professional development. Specialist should have self - study ability and necessity to learn and gain new knowledge for the developing their qualification continuously (Koke T., Lapina G., 2006). Although there many documents initiated by European Union Commission (such as “Memorandum on Lifelong Learning”, “Making a European Area of Lifelong Learning a reality” and etc.) many European Union countries still are lagging in the developing of this field.

In concluding it is should be mentioned, that contemporary economy needs the specialists, which demonstrate personal effectiveness, critical thinking, features of team and network working, communication skills and have the needs and motivation to learn through all life.

Relevance of Researchers’ Competency for Business Sector

As it was mentioned above in contemporary economy, business organizations act in very fast changing and unpredictable environment. Basically the superior position is guaranteed only through the creation of new knowledge implemented in new products and/or services.

These circumstances cause an increased attention to researchers and their involvement in business sector’s activity. To adapt and maintain competitiveness in response to changing consumer requirements and technological change, business sector need appreciate organizational structure and skilled workforce which could manage rising challenges. Definitely, all changes have a significant impact on the structure of employment and on the type of labour requirements. Knowledge era required well organized research and discussions on the inevitability of researchers’ employment in a private sector are the object of many conference and seminars.

Researchers as are the most valuable category of workers in knowledge based economy. Researchers are viewed as the main element of research and development system. They are defined as professionals engaged in the conception and creation of new knowledge, products, processes, methods, and systems and are directly involved in the management of project

(European Commission, 2003). Researchers are the potential knowledge creators.

Europe region focuses on the dilemma how to create attractive and competitive European researcher’s labour market. Unfortunately, despite of many initiatives for the strengthening the segment of researchers in Europe, this region has a shortage of researchers. In figure 1 there is shown the proportions of researchers in to sectors – business sector and public sector.

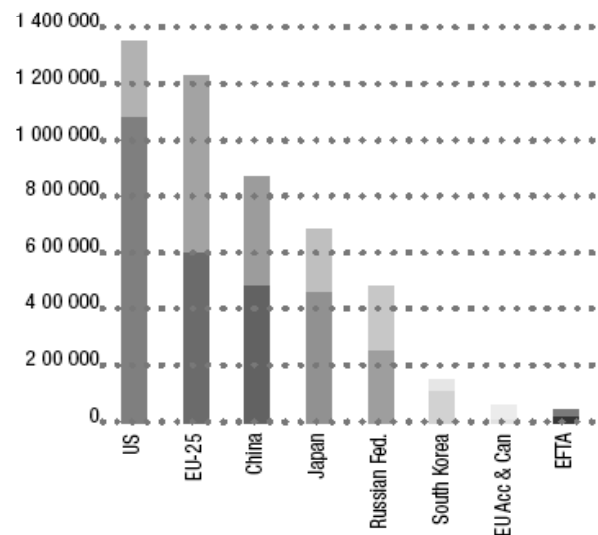


Figure 1. Total number of researchers per world region, 2004. Business enterprise sector (lower bar) and public sector (upper bar)

Source: European Commission (2007). Europe in Global Research Landscape. Luxembourg: Office for Official Publications of the European Communities.

In competitive economies based on result of research like United States, Japan or South Korea, the great majority of researchers are employed in business sector. It is shown by figure 1 that the United States lead globally in terms of the number of researchers in business sector. In 25 countries of European Union only about 49.2 percent of all researchers are employed in the business enterprise sector, meanwhile in the United States about 80.6 percents of all researchers and in Japan about 67.9 percent all researchers work in business organizations. To answer the question why the United States have the higher proportion of researchers in business sector than European Union is quite difficult. Analysing statistical data is evident one fact - European researchers still choose the emigration to North America or other countries because of better employment conditions and better opportunities. Europe must thoroughly rethink two moments – the business sector’s attractiveness for researchers and the researcher’s competency’s conformity to business sector’s requirements.

Business enterprises pay big attention to the increasing the researchers part in their activities, because it is the one way to stay competitive facing

rising challenges of changing economy. In Europe Union there are companies which are trying to strengthen the researchers' segment in their activity. Such companies as "SIEMENS", "INTEL", "IBM RESEARCH", "PHILIPS" declare that researchers are a vital part of the new industry and play crucial role. According to the statistical data, about 32 500 researchers work in "SIEMENS". "INTEL" has about 7 000 researchers, "IBM RESEARCH" – 3 500 researchers and "PHILIPS" – 2 100 researchers employed in research activities.

The business enterprises already are able to raise special requirements for the researchers developing knowledge based activity. More employers of business sector often emphasize personal effectiveness bloc as the crucial for the highly – skilled researchers. Good researchers:

- should be self – discipline (managing his/her time, learning process and etc.);
- should be motivated;
- should be initiative (self starter or taking the responsibility in different situations);
- should be able to manage his/her career (to feel the "ceiling" of career);
- should have the needs for training through all life.

According to the changes partly attributed to globalisation and hyper competitiveness, business organizations are forced to distribute their activity in many countries. Over passing the national markets borders the organizations need the researchers that are able to work in different countries and with specialists representing different cultures. Much more, the products for nowadays customer become trans -/ multi - disciplinary, that means that during their creation participate specialists from different scientific fields. Under such conditions, researcher must have well developed communication skills. First of all, they should be able to prepare documents, present them for the colleagues professionally. Secondly, researchers should communicate with external environments' actors as well. They should be able to present their ideas for mass media, and for customer's society, which is waiting for new products and /or services.

In particular, the team working and networking skills become necessity for researchers. The organizations act in corporation's networks. Knowledge is being created in different countries and under the process of knowledge configuration knowledge becomes the products. Such conditions highlight the ability to codify the knowledge. Researcher must be able to with specialists of the same scientific field as well as with scientists from others scientific fields. Researchers should be able to

work in international teams as well, usually on trans - / multi - disciplinary projects and environments, while maintaining a strong independence and scientific personality.

The problem seeing and critical thinking are seen especially important for the researchers. Researcher should be open minded and flexible within different and rapid developing research subject. Human resources in research should be able in the field of many problems to find the main important, main significant one. They must understand the need of research and techniques of research making, be able to do correctly research according all ethic requirements, and be able to present the results of research.

Ritzen Jo in EUA conference "Research as a Key to a Europe of Knowledge" declared the goal to create "T-shaped researchers" in which the down-stroke represents depth of specialist knowledge in a discipline and the cross-stroke represents breadth and flexibility. T-shaped researchers should be prepared for roles and skills not clearly articulated in advance.

In concluding it should be said that business enterprises value researchers' critical thinking, communication skills, team working or networking skills, personally much more than their degree qualification. Researchers should be not only highly skilled, but capable to work in trans -/ multi - disciplinary team, with high degree of flexibility enabled by lifelong learning approach. These skills become the core stone of organization competencies. Business enterprises agreed that today they look not only for the "entrepreneurial scientist, but also for the "non – conformist inventor".

In order to attract the researchers with above analysed skills business sector should to establish attractive conditions for researchers to work. In knowledge intensive and complex society close cooperation between private sector and universities must be ensured.

Universities Role in the Development of Graduates and Researchers for Business

Nowadays universities appear in new rapidly changing situation as well. Demographic changes, variations in labour market and professions, new challenges for functionality of civil society have increased influence to universities. Basically universities are at the forefront in meeting world changes and challenges, mostly stimulated by globalisation and technological novelties. The gap between the market requirements for skills and the skills portfolio which must have the universities graduate has recently started to become a problem. More and more research is taking place in non-academic environment. Regarding to this, there should

be made the clear distinguish between the universities researchers and researchers working in business. The necessity for the distinguish rises from the different aims of universities and business sector's research.

Universities are more oriented towards long-term research projects which are recognised as essential to the knowledge-based society. Meanwhile private business organizations are focusing on the market orientated research. Researchers should be prepared not only for academic environment. For this reason education and training system should respond to on-going processes in the economy and society as well.

Acting under such conditions, universities must ensure the broad education for the graduates that they could respond the complex demand of academic institutions, business enterprises, and society at large.

The universities must prepare the researchers that are oriented to complex market and have the work related skills. It should be stated that the development of the researcher for knowledge based society crosses the borders of university, because needed skills are developing and through the work experience, and special extra activities. For the development of high level researchers are relevant responsible all interlinked actors – universities, business organisations and society at large. The skills should be acquired by wide scale of courses, seminars, training activities and disputes. On the job training and mentoring is extremely important. It should be emphasized that the links between these different actors should be

ensured. In knowledge intensive economy new and improved pathways to co-operation between the business sector and knowledge institutions must be ensured. The universities are already receiving strong signals from the employers that skills they see as the crucial.

It should be ensured the possibility to study abroad in order to improve the communication skills and team working with different specialist from different countries.

Universities understand 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). However under the pressure of business sector's requirements, the main task of universities becomes to keep the balance between university's fundamental missions and the business requirements for the graduates and researchers.

Figure 2 illustrates the cycle of competence development according to the labour market requirements. Gielen P., Reitsma R., Wilbrink W. (2000) emphasize that education should be competence based and the influence of the market is significant. In learning process significant role plays not only universities, but business enterprises and others actors as well. The strong links between these segments should be ensured.

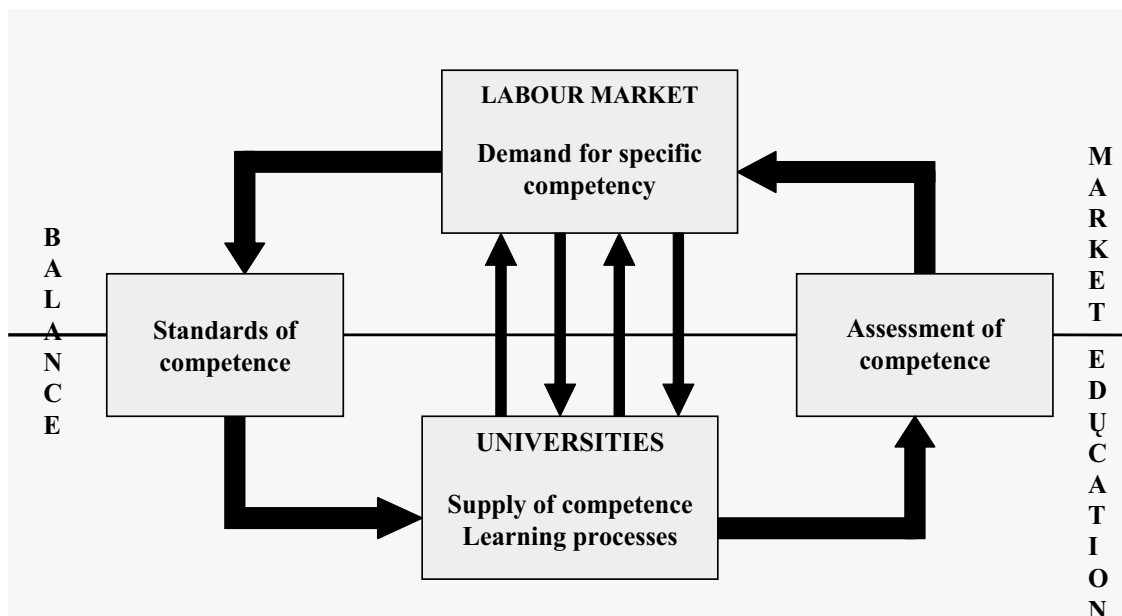


Figure 2. Circle of competency development
Source: made by authors

Analysis shows that doctoral level studies and postdoctoral period (position of researcher who has completed his or her doctoral studies) become essential not only for academic level, but for business

sector as well. Notably in knowledge based society the importance of post -doc is increasingly raising. In previous decades the post - doc the bigger demand has in universities, research institution. The emergence of

knowledge based economy highlights the post - doc significance for business sectors. Besides, business sector is crucial for the development of post - doc activity.

Conclusions:

Intensified competition, technological advances, changing business environment and customers needs, create new requirements for human resources competency in Europe of knowledge.

Business organizations are influenced economic and industrial change as well and must respond to it. According to this, they must be oriented to research and development. For this reason researchers become the power which is able to create high added value and carry out innovation processes driving the whole economy.

In erecting new knowledge economy business organizations, especially huge innovative enterprises, need researchers with broad range of abilities and skills (communication, team working, networking, lifelong learning, critical thinking). Particularly, business sectors' employers emphasize the personal effectiveness and personality richness of workers.

The universities are facing the raising requirements for new and broader competency as well. The cooperation between universities and business sector become inevitability. For this reason universities must react to the signal of business sector, but herewith, they must implement their fundamental missions as must.

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