Meeting of the Mission of Universities in Regions: Forms and Impact

ZDENĚK MATĚJA
University of Pardubice
Faculty of Economics and Administration
Studentská 95, 532 10 Pardubice
Czech Republic
zdenek.mateja@upce.cz

Abstract

Knowledge transfer is considered to be the traditional function of universities. The principal activities of these institutions include creation of knowledge, its verification and transfer to the society. Nowadays, universities are the centers of knowledge overlapping the framework of academic institutions due to their focus. The so-called "third role" was added to the essential role in the field of education, science and research. It is characterized by the creation of innovative potential in relation to the surroundings, connecting the activities of the university with the business community and the public, focusing on the regional development.The aim of the paper is to demonstrate various forms of meeting of the mission of universities and to characterize their effect on the region. There are used the selected analytical methods and also a comparison method in the paper.

Key words: roles of universities, knowledge transfer, regional development, learning regions.

JEL Classification: I23, R11

1 Introduction

University is a model to post-industrial society, it is community aimed at developing knowledge and use of information to improve living conditions. In the hierarchy of values of this community can be seen a shift from material values to quality of life. [4]

In the Czech Republic are, according to Act No. 111/1998 (subsequently amended) on Higher Education Institutions and on Amendments and Supplements to Some Other Acts (The Higher Education Act), higher education institutions, as the highest level of the educational system, regarded as the culminant centres of education, independent knowledge and creative activity. Higher education institutions[1] play a key role in the scholarly, scientific, cultural, social and economic development of society by carrying out the following:

[1] Higher education institutions are of either a university or a non-university type. Higher education institutions of the university type may provide all types of degree programmes as well as related scholarly, scientific, research, development, artistic and other creative activities. Higher education institutions of the non-university type provide Bachelor's degree programmes and may also carry out Master's degree programmes as well as related research, development, artistic and other creative activities. Higher education institutions of this type are not divided into faculties. Higher education institutions may be public, private or state institutions. The concept of university for the purposes of this paper understands the higher education institutions of the university and non-university type.

- maintaining and augmenting acquired knowledge as well as cultivating scholarly, scientific, research, development, artistic and other creative activities in accordance with the type and orientation of the institution;
- facilitating access to higher education in compliance with democratic principles; providing appropriate professional qualifications and training for research work and other demanding specialized activities;
- offering other forms of education; facilitating the acquisition, expansion, deepening and refreshment of knowledge in various areas of learning and culture and thus contributing to lifelong learning;
- playing an active role in the public discussion of social and ethical issues, cultivating cultural diversity and mutual understanding, shaping civil society and preparing the younger generation for life in such a society;
- contributing to development on both the national and the regional level, while cooperating with the various levels of the state administration and regional and municipal government as well as with the business and cultural communities;
- developing international and particularly European cooperation as a fundamental aspect of their activities, supporting joint projects with similar institutions abroad, implementing the mutual recognition of studies and diplomas and facilitating the exchange of academic staff and students.

Knowledge transfer is considered to be the traditional role of universities. Ability of an individual to navigate in the information resources, effectively in their search for and interpret the searched information, set into context, creative process and create from them knowledge, one of the basic assumptions of the concept of a knowledge society.

The knowledge economy is the creation of added value based on return on knowledge, not only through manual production, growing in her the importance of education and use of scientific knowledge in terms of overall competitiveness of the country.

In the „agricultural economy“, land was a key source. Natural resources and labour have played a major role in the „industrial economy“. „Knowledge economy“, by contrast, is based on the use of knowledge.

The following selected characteristics of the knowledge economy show a significant position of universities in the knowledge society.

- The centre of attention is teaching and learning;
- network of innovative organizations;
- increasing intensity of use of ICT;
- scientific cooperation;
- increased codification of knowledge;
- growing share of GDP devoted to knowledge assets;
- networking, cooperation and partnerships;
- barrier-free communication;
- cooperation initially separate the functioning economic sectors.

2 Roles of Universities

Universities currently fulfil three important roles in the society:

- education;
- research and development;
- so-called "third role" („public service function of universities“, „community service function“).

In the area of education, the system should develop and make full use of the potential of individuals, prepare young people for entering the labour market and provide for their employability over the long term, educate active citizens who strive to build democratic society, encourage graduates to pursue continuing education and learn throughout their lives, and further develop knowledge in a wide variety of disciplines. [8]

In the area of research and development the role of higher education institutions is gaining in importance. Higher education institutions are increasingly expected to establish appropriate conditions for the development of R&D of top standards, and to communicate the results of research and development or to apply them in practice as an important source of innovation. [8]

The third role is characterized by the creation of innovative potential in relation to the surroundings, activities joining the university with the business community and the public, focusing on the development of the region. The importance of third role of universities is steadily growing, but the first two are still a priority.

One of the possible classifications of so-called third role of universities indicates S. Robertson. She identifies five types leading to its implementation. [9]

- Clusters

Cluster is a group of interconnected regional private companies and affiliated institutions and organizations whose links have the potential to consolidate and increase their competitiveness. Interested companies can compete with each other, but also addresses a number of similar problems, which can be implemented effectively in partnership. Part of many clusters is universities and often forms the centre of such clusters. Universities constitute for associated companies research base and a source of skilled labor. [7]

- Hubs

Hubs are central points through which things pass or interconnectors used to re / distribution.

- Helix

The concept called the triple helix, created by H. Etzkowitz and L. Leydersdorff, concentrates on the cooperation among universities, private sector and government. Their close interconnection began to create at the end of the 1970’s, when governments of Western European began to coordinate and promote cooperation between industry and scientific institutions, and when economic policy began to connect with policy of research and development.

- Networks

Close interconnection of universities, businesses and government has brought the need for organizational change and the creation of new networks. Institutions transform on the basis of interactions and produce new structures, such as contact centres, centres for technology transfer, strategic alliances and universities, networks of academic, private and government researchers, incubators, etc.

- Hotspots

Hotspots are strategies which identify, target and attempt to connect to perceived high level of desirable activity, such as knowledge and skill rich supplies, high value-added activity. Examples of "area of rapid economic growth" is Silicon Valley.

The motivation for developing of cooperation between universities and business operators in the region are benefits of involved actors. [11]

Benefits for universities include:

- additional funding;
- greater autonomy, which is secured of multi-source financing;
- access to modern equipment of private companies at what the university lacks the resources;
- development and application of research results in practice;
- knowledge of the needs of business operators and possibility to take them into account in education and research;
- practical forms of teaching students;
- direct contact with real professional issues;
- greater employability of students and graduates;
- higher prestige of the university as an entity that contributes to the development of the economy;
- opportunity to recruit employees from the ranks of workers in the business sector.

Benefits for business sector include:

- approach to highly qualified experts;
- access to new ideas and ideas;
- possibility to recruit new employees from the ranks of academics;
- saving capacity of its own employees;
- contact good students and graduates;
- higher prestige of the company;
- possibility of multidisciplinary;
- access to technical equipment of universities;
- widening of knowledge of their employees.

European Education Area

Modernisation of Europe's universities, involving their interlinked roles, has been acknowledged as part of the move towards an increasingly global and knowledge-based economy. [2]

Looking ahead to the next decade – the EUA Prague Declaration (March 2009) outlines 10 key success factors for European universities:

- widening opportunities for participation in, and successful completion of, higher education;
- improving researcher careers;
- providing relevant and innovative study programmes;
- developing distinctive institutional research profiles;
- shaping, reinforcing and implementing autonomy;
- increasing and diversifying income;
- enhancing quality and transparency;
- promoting internationalisation;
- increasing and improving the quality of mobility;
- developing partnerships.

The importance of universities in regions

Position of universities in the region is closely linked with the theory of learning regions[2]. The concept of learning region shows the way, how is possible to mobilize and consequently to use the potential of all regional actors for regional development. The application of this concept requires new flexible forms of organization to make the region able to respond flexibly to changes in the surroundings.

The main reason for the creation of clusters of dynamic entities do not need to be their relationships, but the use of specific regional "resources", especially high socio-cultural quality (traditions, positive expectations, personal motivation, shared vision, strong personalities). Particularly strong capacity to accumulate knowledge in the region and create conditions for the emergence of new ones is considered as the main agglomerative mechanism.

The importance of universities is necessary, albeit insufficient, condition for economic development in the region. The university is a great advantage for all regions that wish to retain and attract creative people.

Universities are an essential part of infrastructure of regional economy and more important source of competitive advantage than the transport links, sports stadiums and shopping centres. In addition to its role as an engine of regional economic development should universities play other roles related with the so-called 3T factors. [5]

[2] The theory of learning regions originated in the 1990's and among its main leaders include Feldman, Florida, Lundvall, Malmberg.

- Technology - the university as a centre of excellent research and source of creation of new technologies.
- Talent - the university as a magnet for talented young students, for researchers and scientists, all together then will give reason for other companies to settle nearby and support mutually.
- Tolerance in the sense of openness towards other people and ideas - universities should create and cultivate just such a climate in which creative people feel good.

The presence of universities in the region by itself is not enough. Community existing around them must have capacity to receive created innovation and technologies and be able to use them. The major players such communities are successful entrepreneurs from the region, business angels and risk investors.

Universities and science and technology parks in regions in the Czech Republic

Subject of analysis is testing of interdependence between the number of universities and the number of science and technology parks in regions[3] in the Czech Republic.

The Science and Technology Park (STP) is an institution oriented into fields of research, technology and innovation entrepreneurship. It utilises its know-how for establishing prerequisites for dynamic development of innovation companies, for transfer of technologies and education for innovation entrepreneurship. [10]

The science and technology parks have been developed and others are prepared in surroundings of scientific research institutions and universities. The STPs originate from initiatives of the production, trade and other business operates. The STPs become important part of regional development plans.

Following types of STPs are registered in the Czech Republic:

- science park (centre);
- technology park (centre);
- business and innovation centre.

Numbers of universities and STPs in regions in the Czech Republic to 1.1.2009 are in the table No. 1.

[3] Regions are classified according to NUTS III (14 regions) in this paper.

Table No. 1 Universities and STPs in the Czech Republic

Region	Number of STPs	Number of universities
PHA	5	33
STČ	6	3
JHČ	5	5
PLK	2	1
KVK	1	1
ULK	2	2
LBK	1	1
HKK	2	1
PAK	1	1
VYS	1	1
JHM	6	14
OLK	2	3
ZLK	5	2
MSK	7	5
∑	**46**	**73**

To analysis of interdependence was chosen the Spearman rank correlation, which is suitable for a small number of values. The level of significance was chosen 5 %. The test result is greater than the critical limit (0,8418 > 0,5341), between number of universities and STPs exist correlation relationship.

3 Conclusion

Universities are the culminant centres of education, independent knowledge and creative activity. Higher education institutions play a key role in the scholarly, scientific, cultural, social and economic development of society. Knowledge transfer is considered to be the traditional role of universities. The basic role of universities is education, science and research and so-called "third role" associated with the creation of innovative potential. In the area of education, the system should develop and make full use of the potential of individuals, prepare young people for entering the labour market and provide for their employability over the long term. In the area of research and development universities are increasingly expected to establish appropriate conditions for the development of R&D of top standards, and to communicate the results of research and development or to apply them in practice as an important source of innovation. All three roles significantly affect the region in which the university operates, increase its competitiveness, contribute to creation of wealth and helping its successful development. The analysis demonstrated the interdependence of number universities and STPs in regions in the Czech Republic.

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