

Innovation in Quality Management of a University and its Communication

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Abstrakt We imagine the system of innovation as a set of processes which control the creation and the implementation of innovation which aim at improving the current educational process, increasing the effectiveness of scientific and research work, increasing the cooperation with the environment used for its application, and also increasing the mobility and the transfer of knowledge. In the strategic objectives of universities, the top priority must be the quality of the teaching process as well as the evaluation of all aspects regarding the institution by the internal work staff! The aspects include the innovation policy including the objectives, the content, the principles and the methodology in management. The same aspects are included in the area of finances, human resource management and in information technology. Every product, including the study programmes, would not attract potential students without active marketing and communication, even if the programme was of the very best quality! Therefore, this contribution focuses on the possibilities of innovation in the major fields of study, the extension of the innovation to the area of specialisation that can be called innovation management, in addition, it also relates to the innovation of marketing communication.

Key words tertiary education, innovation, quality, potential of innovation, process, science, research, marketing, marketing communication

1. INTRODUCTION

Our goal is to give a brief characterization of the current university environment. Define innovation policy options colleges, discuss the benefits of an independent department -laboratory educational and scientific innovation. Point to the possibility of teaching innovation as an independent field of study. The paper is mainly based on the method of analysis, comparison, deduction and synthesis of theoretical and practical knowledge. Based on data and externally processed analyzes, secondary data are interpreted in a broader context.

Institutions of tertiary education are nowadays in a highly competitive environment. During the last fifteen years, plenty of new universities have been established. These established universities are both state and private but most frequently private. However, due to the demographic changes in the Czech Republic, there have been decreases in the number of potential applicants to schools. By 31.12. 2013, educational activities took place in twenty-six state universities and in forty-three private universities. At the state universities, there were 325,171 students and at private universities, there were 43,710 students. Within a year, the number of students at state universities decreased by 2.4% and at private universities, the number of students decreased by 9.6% and this, despite the increasing number of foreign students (in 2013, the total number of foreign students enrolled in state and in private schools was 41,657). The opportunity to study at foreign universities has significantly increased for Czech students. Many students use programs for studying abroad, which last from three to twelve months, or work internship programs within the Erasmus program. According to statistics from the European Commission, Czech students study mostly in Germany and in France. In descending order the following countries are in the statistics: Spain, Great Britain, Iceland, Liechtenstein, Norway, Switzerland and Turkey. Study abroad helps students in their personal and professional development. After returning home, they can compare the level of the Czech and foreign educational institutions.

The urgency of solving the problem of quality assurance in tertiary education increases proportionally with the number of people who enter the environment of tertiary education. The urgency grows proportionally to the increase in the transfers of tertiary education from the so-called elite phase via the mass phase to the universal phase; this is the phase into which more than 60% of the appropriate age group enters the educational process within the tertiary education. High-quality university studies adapted to the needs of the today's age should equip students with the skills, with the knowledge and with the basic transferable competencies that graduates apply in the constantly changing labour market. However, this is not possible without a high-quality education system which emphasises the quality of teaching. Particularly,

assurance of an excellent quality should be the subject of innovation.

2. THE BASIS OF THE INNOVATION POTENTIAL

An old, relatively clear and quite predictable, hierarchically organised university world is quickly becoming extinct. Today's world is in constant motion. It is changing in its political, economical, technological and cultural aspects. Globalization, the new economy, the knowledge economy, innovation - these are very often discussed and very frequent terms. Qualitatively, a new environment implies a change in the attitudes towards management, marketing, human resource management and towards individual innovation processes. Even universities do not only need to perceive these changes, but they also need to react flexibly to them. Rich history, historical roots of institutions and traditional scientific disciplines are not a one-hundred-percent guarantee for the long-term future existence of universities. Innovation then becomes an elementary feature for the creation of new strategies. Successful strategies focus on the search of the innovation ideas. The crucial importance of the innovation strategies is the fact that the school can help to identify, to build and to keep a competitive advantage, a unique offer which is essential for ensuring prosperity.

From the meaning of the word "innovare", we derive that it means a novelty, newness, restoration, improvement and development. According to Drucker, innovation is a specific tool of entrepreneurs which enables the use of the changes in the business environment as an opportunity for running a business in different areas or for providing different kinds of services. Entrepreneurs must purposefully look for sources of innovation; it means to look for changes and their symptoms that are a stimulus to successful innovation. According to Witfield, innovation represents a number of complicated activities occurring during a solution of some problems. The OESD conception includes the innovation of the processing of thoughts (ideas) into a product or into a service which is possible to sell. The concept can also include a new or an improved production process or a new method of social services. Oslo Manual Innovation divides innovation into technical (product, service, technology) e) and non-technical (organisational and management innovation). The specialised literary sources offer a wide range of other classifications of innovation, however, the expected result is the satisfaction of customers and of employees. In that case, it is the saving of labour input, saving of natural resources, the uniqueness of the offer etc. According to the National innovation strategy of the Czech Republic, innovation is the restoration and extension of the range of products and services as well as of the related markets, creating new methods of production, delivery and of distribution, implementation of changes in management, in organization of labour, in working conditions and in qualification of the workforce. In relation to education, innovation concerns the development of conditions for carrying out excellent research, for cooperation between the public research sector and enterprises in the transfer of knowledge. In such situations innovation concerns the support of the innovative business and the development of human resources for research, development and innovation. In the main vision, it states that "giving higher importance to innovation and to the use of the top technologies as the sources of competitiveness of the Czech Republic and of the increase of the technologies' benefits for a long-term economic growth, for the creation of proper job places and for the development of the quality of life in the Czech Republic". The complete innovation system can be seen as a partial subsystem influenced by the local institutional environment and by the external factors. NIS is divided into four main parts. It deals with excellent research, with the cooperation between the corporate and the academic sector in the transfer of knowledge, with the support of

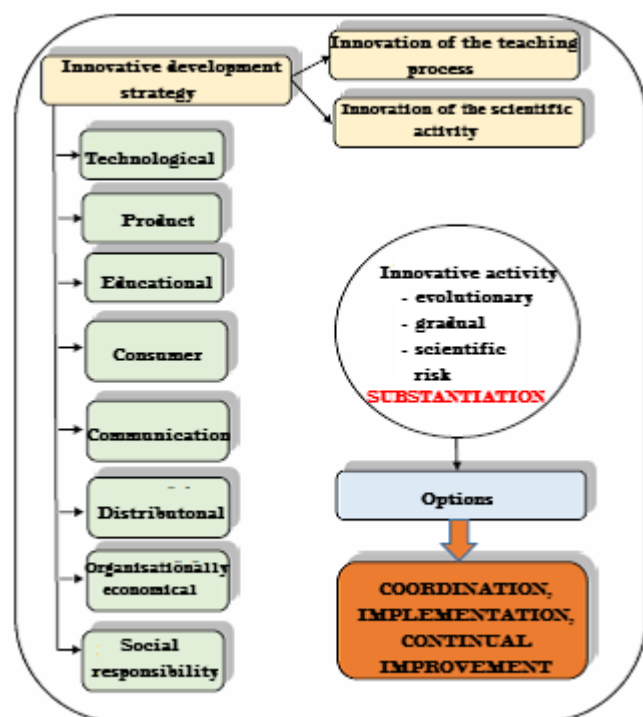
running innovative businesses and with people as the carriers of new ideas and as the initiators of changes.

This subsystem has been developed on the basis of discussions by many experts (Cooke 2002 Lundvall, 1992, Porter 1990 etc.). Innovation used to be regarded for a long time as a direct result of research and development activities (R & D), the creation of innovation used to be associated with the so-called "linear model of innovations". According to the linear model, higher investments in the basic research will result in the increase of applied research and in the greater creation of innovation. Innovation according to this concept develops via a sequence starting with a basic research followed by an applied research and a prototype development of the commercialisation phase and introducing the innovation to the market. This view of innovation and of its formation used to be continuously updated with added information about the influence of the market pressure, of the demand and of the mobility of human resources. The paradigm of the concept of innovation has been changed itself. In the past, the typical approach to innovation was the "reserved" approach, one which was based on an exclusive control of creation of innovation by one institution. Currently, there is a trend where innovation is developed by a mutual cooperation and relation between various actors. This is between companies, universities, research institutes, science and technology parks, private laboratories and cooperation with customers, suppliers, competing companies and with the public sector. Mutual cooperation significantly expands the possibilities of creating new knowledge and innovation that individual participants themselves would not be able to create only through their own means and resources. This non-linear (interactive) innovation model describes the entire spectrum of the actors in the institutional environment which use innovation, when knowledge is transmitted in both directions, in several directions via and thanks to the use of new technologies, of telecommunications, the Internet, the mobile devices, chats, discussions, video conferencing, etc.

2.1 The innovation policy of universities

Universities, in the present stage of their development should not only be centres for preparing specialists in particular areas, but they should also be centres of innovative activities. Science organically connected with the teaching process and with the improvement of the quality of graduates should be based on the process of transferring newly acquired knowledge from scientific research to students via innovated teaching methods and via forms of education and also via the implementation of innovation educational technologies. An innovation system should be a set of processes controlling the development and implementation of innovation focused on improving the current educational process, on the increase of the efficiency of scientific and research work, on the cooperation with an area determined for application, on mobility and on the knowledge transfer. In order to make the school achieve an excellent quality, it is necessary to work up a strategic conception of the innovation policy including the objectives, content, principles, methodology in management, also in the area of finances, the human resource management, information technology, communication and marketing tools and features. The definition of the objectives should specify the expected results. The innovation processes should include social, financial, psychological-pedagogical factors, research activities, motivation of teachers. It should also include, the research department employees and students - see Figure no.1

Figure 1: The focus of the innovation processes of universities



Source: Adapted by the authors according to KOROLEVOVÁ, Tatiana. *The innovation part of the development of science at a university in the Ukraine*.

The information mentioned above clearly implies that individual innovation ideas overlap one another, are related to one another or create synergetic effects. Technological innovation (providing a modern interactive audiovisual equipment, records and saving lectures on-demand, video conferencing etc.) also brings opportunities for teaching innovation (students' involvement in teaching by interactive and by participative techniques, a higher extent of demonstrative teaching and consequently, more thorough remembering of the information). The development of the information culture, the use of telecommunications and of the mobile applications influence both internal and external communication and also the organisation of the work of staff and of students. Purchase of audiovisual technologies will be influenced by the economic situation of the school. Its use has an influence on the technical competencies of teachers and of students.

Innovation which brings reform and modernisation to the university education also depends on the ability and motivation of teachers and of the research workers. Better working conditions, transparent and fair recruitment of employees, better initial and continuous professional development, bigger acknowledgment and prestige of employees and better rewarding for outstanding teaching and research levels of performance are necessary in order to ensure that the school is able to create, attract and then retain high-quality academic employees.

According to associate professor Kovalev, vice-chancellor (vice-rector) for Odessa State University, the laboratory of educational and scientific innovation could be the structural department of universities. Two groups of specialists would work there. The first group would deal with the organisation and with the method of work, would analyse the results of scientific research of the university and other scientific institutions, would evaluate the possibility of using innovation or innovative ideas, would propose

programs for their implementation in the university environment and it would coordinate the work of individual departments. The function of the second group of specialists in management and in marketing innovation would be to perform research, cooperate and obtain feedback from the subjects implementing the innovation (in both internal and external environments, in companies ...), also evaluation of the results of innovation activities, suggestion of ideas and of techniques for improving the innovation processes. In the organisational chart, it is possible to classify this laboratory as reporting to the vice-chancellor (vice-rector) for research, development, and (newly added) innovation.

If we were to arrive at a conclusion regarding precaution then it is necessary to think about the way and concept of the management of the innovation strategy. In the strategic plan of the school, it is not enough to only declare the intention to become an innovative school in an innovative environment, but it is also necessary to develop a plan of action in the process of procedures. We consider it relevant to evaluate the readiness of the school and of its stakeholders for the realisation of their intention, to set the priorities, to implement a system of working with innovation and to make crucial changes on the strategic level. It is possible to include in the organisational structure the department whose function it will be to propose and subsequently to implement the innovation model in teaching, - for example, the department can implement educational processes, scientific research activities, coordination of activities with the other universities, faculties and departments. This can be done by the evaluation of the results achieved, by their improvement and by the constant increase in the effectiveness of the innovation activities. Only in this way, the school can become a high-quality institution and subsequently, it can declare its excellent quality in the media. There will occur a natural development that will have a positive impact on students and will result in the readiness and in the employability of graduates, and then the school will become a popular educational institution and a frequent partner for companies assigning research or, cooperating in science.

2.2 Science, research and innovations

Motto: "One of the priorities of this government is the development of a skilled workforce and creation of a close relationship of science with industry." Pavel Bělobrádek, Chairman of the Council for Research, Development and Innovations

The Czech Republic has a small open economy with a strong orientation on the processing industry and focused on export. It is classified among the countries where the main factor of assurance of the competitive advantage is the ability of companies to develop and to implement new products, technological procedures, changes in the organisation of work and implementation of new ways of selling products and services. In terms of the parameters of the innovation performance received from the European Commission in the publication called Innovation Union Scoreboard 2013, the Czech Republic has also a relatively high level of business investments in innovation and a high number of innovative small and medium-sized enterprises. A weaker position in the Czech Republic is seen in case of research systems and in the use of intellectual property.

An effective and systematic support of the educational and of the research activities plays an important role in stimulating the factors of long-term economic development in the government's policies. In terms of the share of public money spent on education, on research and on development of the state budget, the Czech Republic is with a share of 11.1%. It is below the European average (12.4%). The share of expenses on R & D in the gross domestic product has

increased from 1.4% in 2010 to almost 1.9% in 2012. Research and development is carried out in the Czech Republic in more than 50% of all cases in the business sector (automotive industry, machinery industry).

An important condition for maintaining economic competitiveness, high level of education and cultural development of the society is high-quality research conducted in the public sector. The extent and quality of public research is a certain indicator of the maturity of the society and also an important factor in deciding by the private sector on the extent of the investments in the business activities based on the use of the new knowledge and of the new data. In the Czech Republic public research is traditionally performed in the university sector and in the government sector which includes mostly institutes of the Academy of Sciences of the Czech Republic. Next, it is performed in research institutes governed by individual ministries (research Institutes of individual ministries). In 2012, the total expenses on R & D in the public research reached 33.2 billion CZK, which represents slightly less than 46% of the total R & D expenses. In the last two years, there has been a relatively significant increase in the share of the public research within the research system of the Czech Republic.

An important part of the development of the research system is to make the international cooperation in research more intensive. The main tool for the support of European research cooperation is the seventh framework programme which will be replaced from 2014 with a new framework programme for research and innovations called Horizon 2020. By the end of 2012, research organisations have been involved in 676 research projects of the seventh framework programme on which was spent an amount of more than 136 million Euros. In the future, the involvement of public research in international cooperation will play an important role in obtaining the extra-budgetary sources for funding of research activities, in the use of newly constructed research infrastructures and in the acquisition of new partnerships for improving the quality and the international availability of Czech research.

High-quality research is therefore a necessary prerequisite for high-quality university education. Apart from other things, it enables a high-quality preparation of people for research and innovation activities in companies. The base for an effective transfer of knowledge and technologies is cooperation between universities and companies, which is developed thanks to mutual trust and mutual respect. An example of how to support this cooperation is the activity of the South Moravian Innovation Centre (JIC) which connects companies with research institutions via innovation vouchers.

For spreading the data of science and research and for more accessible and for more flexible education, it will be necessary to fully use the potential of information and of communication technologies. A fundamental improvement of the current education systems and of the professional training can be achieved by their adaptation to today's digital world. The ICT tools that are open (in fact, accessible to the public) educating sources and open procedures enable the increase of the effectiveness of education, to better adapt to an individual style of studying, to the pace of learning and to optimise the learning process. They also enable a better use of the sources. Such precautions will also help to increase the availability of knowledge, and therefore, just access to education. Making education possibilities accessible can ultimately lead to a situation where everyone can study whenever he or she wants, anywhere with the support of a chosen teacher and with the help of any means or a technology. According to estimates, by 2030, 414 million students should pass through the university education systems of the entire world. The current inflexibility of education and of professional

training would not make it possible, however. Computer skills, the ability to communicate via other digital technologies will be required in 90% of all job places. Therefore, it is necessary that the education systems and the systems of the professional training provide for the acquisition of the required skills. Via the initiative called 'Opening up Education', educational institutions have the possibility to evaluate their organisation model and to find out if it is possible to approach the current challenges as opportunities. Last but not least, there is an obvious pressure on costs spent on education systems. It is necessary to look for more efficient ways of use of sources and also to implement precautions for moderating the education costs paid by households.

3. THE MANAGEMENT OF INNOVATION AS A FIELD OF SPECIALISATION

"An innovation is a specific tool of entrepreneurs and a means to use changes as an opportunity to implement a new business or a new service. It can be taught as a discipline, it is possible to learn it and it can be practically used."

Peter F. Drucker, Innovations and Entrepreneurship.

In Drucker's quote, it states that innovation can be taught as a discipline. We assume that the demands on graduates are changing during their professional lives. In relation to the global integration of the world economy and with the acceleration of the innovation cycles, the changes in these demands are also accelerating. Therefore, the education of graduates must be in addition to the professional preparation focused on transferable skills and on the ability to expand, to deepen and to improve - in fact, to innovate the professional skills.

The World Economic Forum (WEF) every year prepares a report called Global Competitiveness Report which assesses the competitiveness of 144 countries in the world. In 2014 the Czech Republic improved by 9 places, after four years of a continuous decline, and was ranked in the 37th place (35th place for Spain, 36th place for Portugal, and 38th place for Azerbaijan.) The almanac is globally acknowledged as one of the most complex reports comparing the factors that affect economic growth and competitiveness of countries. The countries are assessed in twelve categories which include: institutions, infrastructure, macroeconomic environment, healthcare system and elementary education, higher education and professional trainings, the effectiveness of the internal market, the labour market, financial market, technological readiness, market size, level of sophistication in business and innovation. The strongest aspect of the Czech Republic, according to the almanac, is the macroeconomic environment followed in the ranking by healthcare, then follows elementary education and market size. On the other hand, **the most problematic areas are institutions, innovations and the infrastructure.** If we admit that innovation is the source of competitiveness, then it is necessary to include in teaching some subjects dealing with the issues related to innovation. Therefore, in order to enable the future entrepreneurs, managers, top staff (graduates) to deliberately search for the source of innovation, changes and the symptoms of changes indicating the direction of successful innovation, people must know and use the principles of successful innovation. And specifically, these should be part of learning, eventually of the field specialisation at a university.

An example is a minor specialised field of study (University of Economics, Prague VŠMIE, foreign universities) which includes a set of subjects focused on the issues of innovation. Its aim is to introduce innovation as a necessary prerequisite for a long-term, stable and successful position of a competitive enterprise in a

turbulent market. It is necessary that the students understand and are able to apply the innovation processes in practice in particular areas, the application can begin with generating new ideas and end with their commercialisation. The reason is that the students can assess the potential of the proposed innovation, to adopt the criteria for the searching and evaluating of new ideas, procedures, methods and tools. Also, the students assume the importance of innovation in the management of communication processes. In practice, the real success of innovation depends on the assessment of risks, on the ability to obtain information from the market, on the processing of the information and it also depends on the creativity of managers.

In the final stage of innovation is the very important marketing of innovation which is responsible for a successful implementation of an innovation in the product, in the pricing, in the distribution and in the communication strategy of a company and it is also important in the brand management. Milan Kašík claims in regard to this topic: "Successful and effective relationships of an organisation with the public (external communication) - this is represented by the potential students and their parents (note a co-author of the contribution) - are based on communication, on relationships and on the organisation hierarchy inside the company, i.e. it is based on internal communication." If students gain during their entire study innovative skills, knowledge and appropriate competences, then they have a real chance to succeed in individual job positions of intensively innovative companies, in technological parks, in consultancy, in governmental and in scientific institutions. There are many subjects that are offered for enrolment in an educational programme: innovation management, innovation marketing, creativity and innovation in managers' work, project and process management, commercialisation of innovation - start-up, business plan, technology news report, law and intellectual property protection, risk management of innovation, the importance of financial analysis for the success of innovation, the innovation economy, innovation controlling, innovation financing, ethics and innovation, strategic innovation management, strategic innovation marketing, macroeconomic aspects of innovation, etc. The elementary principle of this approach is to provide the possibilities to include in each subject the concept of innovation within the innovation process of the content of teaching, and also to include the issue of trends and the attitudes in various subjects.

4. CONCLUSION

The institutions of tertiary education are currently set in a highly competitive environment. The authors of this contribution have been focused on the phenomenon of innovation and on the innovation policy options of university institutions. They have identified the opportunities for innovation which are open within the initiative called 'Opening up Education'. These opportunities, however, require innovation in the area where the potential of information and communication technologies is used, and the opportunities also require a crucial adaptation of teaching to the today's digital world. They pointed out the relevance to include in the organisational chart a department whose function would be proposing and a subsequent implementation of an innovation model via the learning process, via research and scientific activities, via the coordination of activities with the other workplaces, with the other faculties, with the other departments. Another function would be the evaluation of the obtained results, their improvement and a continuous increase in the effectiveness of the innovation activities in a way that innovation becomes the fundamental theme of the corporate culture. A high-quality research is regarded by the authors as a prerequisite for a high-quality university education, which apart from other things also enables a high-quality preparation of high-quality people for research and for innovation activities in companies. If we admit that innovation is the source of competitiveness, then it is necessary to

include in the teaching subjects which deal with the innovation issues. Therefore, in order to enable future entrepreneurs, managers, top staff (graduates) to intentionally search for the sources of innovation, for changes and for the symptoms of changes indicating the direction of successful innovation, they must know and use the principles of successful innovation. And those should be part of the learning, for example as a field of specialisation at the university.

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