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STRATEGIES OF THE HIGHER EDUCATION INSTITUTION BASED ON DISRUPTIVE INNOVATIONS

Abstract

Higher education institutions in Poland, similarly as in other European countries, are reporting to thorough transformations which concern the level of administering and the organization of academic institutions, as well as the level of axiology, basic aims and the function in the modern society. These changes are a consequence of the overall process of the reorientation and the reorganization of the scientific knowledge in compliance with the requirements of the knowledge-based economy. In the paper the authors propose the model of the modern higher education institution (innovative university) which gives a chance of fulfilling the idea of creating and sharing the knowledge with the economic sector and the society. Simultaneously they recommend four base innovative strategies for the higher education institution allowing better utilization of the potential of the university research.

Keywords: university, model, knowledge, strategy, innovations

Streszczenie

Strategie szkoły wyższej oparte na przełomowych innowacjach

Szkoły wyższe w Polsce, podobnie jak w innych krajach europejskich, podlegają gruntownym przekształceniom, które dotyczą poziomu administrowania i organizacji instytucji akademickich, jak i poziomu aksjologii, podstawowych celów i funkcji we współczesnym społeczeństwie. Zmiany te są pochodną ogólniejszego procesu reorientacji i reorganizacji wiedzy naukowej zgodnie z wymogami gospodarki opartej na wiedzy. W niniejszym opracowaniu proponujemy model nowoczesnej szkoły wyższej (innowacyjnego uniwersytetu), który daje szansę na urzeczywistnienie idei tworzenia i dzielenia się wiedzą z sektorem gospodarki i społeczeństwem. Jednocześnie rekomendujemy cztery podstawowe strategie

innowacyjne dla szkoły wyższej pozwalające na lepsze wykorzystanie potencjału badań uniwersyteckich.

Słowa kluczowe: uniwersytet, model, wiedza, strategia, innowacja

Introduction

Higher education institutions are institutions firmly rooted in European tradition and culture. Currently they are quite a diverse group – there are many models of higher education institution functioning and operations. Also differences in structural solutions adopted in different European countries are clear. In the subject literature, several higher education typologies can be encountered; they bring the discussion on this subject in order (the most important are the models by Clark [1986], Vought [1989], Braun, Merrien [1999], Thieme [2009]. These models present the role of higher education institutions with regard to economic development and civilization progress by carrying out disruptive research and teaching innovative contents. It corresponds to the guidelines and recommendations contained in the Commission Message to the Council and the European Parliament of 2006 “Implementing the modernization program for universities; education, scientific research” [<http://eur-lex.europa.eu/LexUriServ/LexUriSery.do uri=COM:2006:0208:FIN:PL:PDF:17.02.2015>]. The content of this Message is valid, especially with regard to the problems of transformations of the Polish higher education. Higher education institutions are complex organizations that fulfil different functions and affect a number of aspects of social and economic life [Drucker, Goldstein, 2007; Boucher, Conway, Meer, 2003: 887–897]. They always operate in a specific context that affects their operation. Basically, it is difficult to examine the models of national higher education or the ways of action of individual institutions without a broader international, national or even local context. Civilization factors, such as IT it: society development [Vlasceanu, Davies, 2001] or commercialization of science and knowledge [Bok, 2004] related to the knowledge-based economy are equally important. Along with the development of market economy in Poland, a discussion began on the shape and the role of higher education institutions in the occurring transformations, especially in view of growing challenges of the knowledge-based economy. In the discussion attention is paid to the need for determination of a new role of the higher education institution in the process of flow of knowledge and technology to industry and hence to the increase in cooperation with the sphere of entrepreneurship and R&D. Transfer of technology from the university to industry is important strategically for many reasons, among others, because it is a source of financing scientific research and the source of innovations for businesses. In addition, this transfer is also an important element of the economic development for people responsible for developing the strategy of the state. The strategy of industry pins its hopes on technology transfer and treats it as a tool of development of the knowledge-based economy and

increased competitiveness [Bozeman, 2000: 627–655]. This new role requires, apart from the fulfilment of traditional functions (educational and research), creation of flexible frames of the functioning of the university, popularization of strategic management, introduction of modern research and education methods, development of mechanisms ensuring education quality control, focus on broadly understood innovations. This new approach and related tools (concepts, strategies and models) are intended to develop innovations and launch them effectively.

A modern higher education institution

Since the dawn of time, universities have contributed significantly to the economic development. However, presently operating higher education institutions are characterized by a significant diversity of goals, missions and functions, which significantly go beyond the ones traditionally assigned to this type of institutions [Drucker, Golstein, 2007]. Views on the impact of higher education institutions on the environment have been evolving towards a more complex view, taking account of not only social and cultural, but also economic effects of the university is operations. Currently, the role of the university is examined most often on four planes:

- the university as an economic unit;
- the university as a knowledge producer;
- the university as an institution shaping human capital;
- the university as a regional actor [Boucher, Conway, Meer, 2003; Olechnicka, Pander, Płoszaj, Wojnar, 2014].

Effective transfer of knowledge from the university via various formal and informal mechanisms affects growth in innovation and contributes significantly to the economic development. Secondly, the character of innovative process undergoes changes; it becomes more and more open, interactive and networked. It means that businesses are looking for the sources of innovations in a wide circle of potential providers, from cooperating businesses to scientific, public and private institutions. Businesses that use the model of open innovation are focused to a greater extent on the use of possibilities beyond them, their identification and commercialization [Chesbrough, 2007]. Networks of interrelations between various partners where reflexive relations are significant, gain in importance. Entities cooperating with higher education institutions are above all businesses with high degree of innovation [Pittaway, Robertson, Munir, Denver, Neely, 2004]. In papers devoted to the role of a contemporary university, the meaning and the special character of changes with regard to local development are emphasized. A higher education institution is an important element of the local stage that is perceived as stimulus to the development of a particular area. Universities create characteristic innovative environment for companies operating in the region, which enables them to develop better and face challenges of global market [Kukliński, 2001]. In

addition, demand for educated employees increases, in particular in businesses that utilize knowledge intensively. This tendency strengthens indirectly and directly the role of the university on the local stage. Finally, the cause of a changing attitude towards the mission and functions and higher education institutions is competition on the part of other educational and research institutions (e.g. the business sector) [Józwiak, 2003].

Strategies of the higher education institution based on innovations

In search for the best strategy of the higher education institution based on innovations, it is worth reminding that the word “innovation” originates from latin *innovatis*, namely renewal, creation of something new. In Poland the word is defined as “introduction of something new, newly introduced object, novelty, reform” [Tokarski, 1980: 307]. The colloquial meaning means something new and different than the existing solutions; it is associated with necessary change for the better [Janasz, Koziół, 2007: 11] and very often used also as a synonym of the word”. Without deciding which from among the presented definitions (classical or contemporary) stresses preferably the essence of innovation, the authors would like to emphasize that operations of higher education institutions should take account of innovation-based strategies. According to the authors, the basis for the present development should be the theory by C.M. Christensen concerning disruptive innovations [Christensen, 2010]. Based on the analysis of behaviours of businesses related to the preparation and implementation of innovations in the industry of computer disks, mechanical diggers and computers. C.M. Christensen concluded that the reasons for their failures (in spite of “good management”) should be sought in the lack of skills of differentiation of sustaining innovations from innovations that disrupt the course of development of industry and *continuous* innovations from radical innovations, higher pace of technical progress over market demands and bargaining power of customers and managers of successful businesses, which are reluctant to introduce new and high risk innovative projects [Christensen, 2010: 21]. Table 1 present a model of innovation-based strategies, to be applied in practice by higher education institutions in Poland. The basis for their selection are four types of innovations created in the higher education institution (included in two strategic cognitive dimensions), namely:

- continuous innovations;
- radical innovations;
- sustaining innovations;
- disruptive innovations.

Table 1.

Strategies of the higher education institution based on innovations

Type of innovation	Continuous innovations	Radical innovations
Sustaining innovations	Exploration of the past operations	Development of a new domain based on market needs
Disruptive innovations	Development of a new domain based on technical progress	Development of a new business

Source: prepared by the authors.

Continuous innovations consist in facilitation of production or commercial processes and are usually created step by step. As compared to radical innovations, they are less revolutionary. On the contrary, radical innovations consist in creating new products and processes that change completely traditional functioning of the market. Both of the aforementioned types have a common feature: they improve effectiveness of products measured by the size of parameters requested by main and profitable customers. Another pair in the model are innovations continuing/disrupting the previous course of sector development [Christensen, 2010: 18–19]. The former continuing innovations improve product functionality, while disruptive innovations usually worsen (at the beginning of implementation) product functionality. They are simpler and cheaper, and (at the beginning of implementation) they forecast smaller profits. Furthermore, they are subjected to market gambling, first on emerging or insignificant markets, and the most profitable customers do not want to or even cannot use them for technological reasons. They are sought by least profitable customers who count on that, thanks to them, they will become market leaders in the future.

So defined continuous innovations, radical innovations, sustaining innovations and disruptive innovations enable four base strategies to be distinguished, and these are: exploration of the past operations, development of a new domain based on market needs, development of a new domain based on technical progress, development of a new business. The strategy of exploration of the previous operations is a process of exploring new knowledge based on in-depth analysis and scientific research. The strategy of development of a new domain consists in creating a special field of activity or, in other words, market and technological innovation. The first case consists in discovering a new market and offering there the existing innovation, while in the second case – discovering a technological innovation and searching for a relevant market segment for it.

The last strategy in the model is development of a new business. This process consists most often in establishment of a new business. It is conducted for instance in the formula of the so-called spin-off and spin-out companies. The strategy oriented on establishing businesses is the most complex, encumbered with high risk and requiring substantial resources.

Conclusion

The university is one of the most important social institutions created by Europe and spread in the world. New conditions of the functioning of universities and growing expectations as to the scope of their mission and functions imply the necessity for strategic decision-making that will enable universities to affect to a greater extent innovation and shaping of the knowledge-based economy. The university – as an organization that gains, processes and spreads knowledge – becomes more and more significant in the innovation system. This meaning of universities for innovation of the environment is a complex and multithreaded issue. It is influenced by many factors that relate both to the nature of the university, the entrepreneurship sector and the regional conditions. Not only do higher education institutions produce applied knowledge absorbed easily by the market and the basic knowledge, they also participate in its transfer.

It should be emphasized that the product offered by universities, namely knowledge, becomes an important determinant for the economic development. A characteristic feature of the modern university model is reliance on a strong relation with the environment, creating a network of mutual interactions with business and administration. Additionally, the deviation from bureaucratized structures is intended to meet dynamic changes that are taking place in the environment. In order to be able to shape pro-innovative attitudes effectively, the university itself should be innovative. For this reason, it is so important to select a specific innovative strategy, manage professionally technology transfer and marketing of innovative products and services offered by the university, and attract industrial and commercial partners. The above indicated changes are to contribute to the creation of a university that will skilfully become closer to the economy, will improve efficiency and effectiveness of innovative processes in the economy, with simultaneous creation of its better image and competitive position, maintaining developed for years academic traditions. A modern university itself is to be innovative and enterprising it must educate staff with a widely expanded awareness of accepting pro-innovative attitudes. Such a university enables competences and skills to be formed, which are necessary to fulfil a creative role in the society that develops the knowledge-based economy.

A modern university must be focused on the cooperation with the environment, creating many groups interested in its operation, i.e. groups of stakeholders, externally-controlled (borrowing the known dichotomy by David Riesman [2011]).

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