



World Scientific News

WSN 48 (2016) 149-154

EISSN 2392-2192

Good Practices in Relationship Between Business and Science Environment – Selected Notions

Marzena Sielenzak-Jankowska*, Małgorzata Martynoga

Wrocław University of Economics,
Faculty of Economy, Management and Tourism in Jelenia Gora,
3 Nowowiejska Str., 58-500 Jelenia Gora, Poland

*E-mail address: jankowska.martynoga@gmail.pl

ABSTRACT

An increase in innovation of enterprises, therefore economic growth of a country, require involvement of a sector of science, supported by a financing system of studies. Hence, there is a need for close cooperation between scientific units and their social and economic surroundings, as commercialization of knowledge and technological transfer are related to the notion of innovation. Purpose of the article is to stress the significance of creativity in operation of modern enterprises and a presentation of good practice in the scope of cooperation between science and business.

Keywords: innovation; creativity; cooperation between business and science; good practices

1. INTRODUCTION

Power of innovative world economies is cooperation between the environment of science and business, and activity of the enterprises sector in performance of research and development works. Knowledge applied skilfully along with an innovative approach decide on a competitive advantage. Effective knowledge management is not only an element of a modern economy, but also a priority on all EU levels. The most significant problem related to implementation of innovation in Poland is believed to be rooted in lack of financial resources and

weak cooperation between science and economy. However, seldom is it mentioned that this situation also results from lack of creativity among entrepreneurs or company managers. Conditions provided by the era of the knowledge-based economy stimulate development of networking connections and transfer of knowledge between various entities. In Poland, dynamic transformations taking place in higher education and a business sector can be observed. One of the challenges that must be faced today by universities, is to seek for creative solutions to problems of a modern economy. While a well-managed enterprise can direct its employees properly, motivate them to create innovative ideas, thus a modern company is capable of strengthening its position thanks to innovations.

2. CREATIVITY AS A CHALLENGE IN MANAGEMENT

“Creativity” is a process of creating new, useful ideas and concepts related to products, services, processes and procedures. [Brzeziński i Leszczyńska, 2009] We live in the era of globalization, change and risk. Within the conditions of the knowledge-based economy, success of an organization depends on entrepreneurship, creativity and innovation. A knowledge-based organization is intelligent, managing knowledge with full awareness, directed at achievement of particular objectives, covering men and a strategy, culture, technology. Hence, complex management becomes a necessity, consisting in transformation of an intellectual capital into a financial result. [Skrzypek, 2014] Creativity and innovation pose actions, through which an enterprise becomes successful within a given market. Creativity is utilized when traditional methods fail, and in uncertain circumstances it allows to employ varied data more effectively, what may lead to new, innovative solutions.

The notions of “creativity” and “innovations” are often used interchangeably, although they are not identical. An innovation process is commenced by generation of ideas, and here vital importance is ascribed to creativity, while the scope of innovation is broader, as it also encompasses the stage of implementation. Creation of innovations in an organization requires transformation of a company’s innovation potential and creativity of its employees into actions that can bring measurable results. [Brzeziński i Leszczyńska, 2009] Thus, an enterprise must be equipped with adequate capabilities to create, adapt and introduce innovative solutions and concepts. It also must undertake entrepreneurial actions related to proper commercialization of innovation. Creativity is most often referred to individuals, posing a source of knowledge and experiences, when it poses an individual process. Innovations require combination of multiple persons, becoming a social process [West, 2000].

However, new ideas and solutions are becoming a result of team creativity increasingly more often, which is brought to light as a result of knowledge transfer, cooperation and engagement of a specific group of entities. Creativity as a development process for creative solutions still poses one of the biggest challenges in managing contemporary enterprises. [cf. Clegg, 2001, Dalkir, 2005, Silver, 2000]

In organizational practice, creativity means an ability of constant learning of new manners to acquire and transfer knowledge. Numerous examples in Polish and foreign practice confirm that creativity contributes to development of a knowledge base, thus to creation of innovation. Establishment of cooperation between the sectors of science and business is highly necessary.

3. POSITIVE EXAMPLES OF COOPERATION BETWEEN THE ENVIRONMENTS OF BUSINESS AND SCIENCE

Good practices may pose an incentive for establishing cooperation between scientific centers and a business sector. Specific institutional and legal practices, principles and methods of cooperation as well as communication channels or innovation encouraging projects are assumed as a “practice” [Analysis..., 2014] Direct cooperation between the sphere of business and science is not a simple process, this it is necessary to promote all interactions between those sectors of economy. Development of connections between them may take place in different manners, [Korniejenko, 2010, Poznańska, 2012], through e.g.: development of network systems and structures, implementation of an open innovation model, based on processes of internal and external flow and transfer of knowledge and information, widening access to financial sources facilitating the commercialization process, a technological market covering the trade of patents, licenses, know-how, intensification of promotional actions within universities, creation of professional organizational units at universities, responsible for cooperation with economic practice, and development of an operation strategy related to research and didactic cooperation with enterprises, exchange of employees, enhancement of scientific employees’ motivation to undertake scientific cooperation with economic entities, increasing the entrepreneurs’ awareness related to a possibility of cooperation, through educational actions, publication of examples of companies successes achieved thanks to science, publishing “good practices”.

Polish and foreign experiences presented below confirm the significance of undertaking cooperation between science and business. Regarding broadness of the notion, only some aspects have been stressed, corresponding to operation of selected entities, which pose a perfect example of relationships between the business and science sectors. Wicomm Transfer by the Gdańsk University of Technology is a unique project on our country’s scale. [Cooperation..., 2013] This undertaking enables transfer of innovative knowledge and strengthening of relationships of representatives in the R&D field with entrepreneurs, through: organization of internships for employees of the ETI Department, in companies participating in the program, development of New Technologies Demonstrators and organization of apprenticeships for companies’ employees at the Gdańsk University of Technology, during which they have an opportunity to get acquainted with selected ICT/ETI technologies.

Internships of employees of the Gdańsk University of Technology in the companies aim at gaining knowledge on operation of an enterprise, applied IT solutions, potential problems, developmental directions and innovation innovative absorbency. Therefore, there is a chance to deliver a better diagnosis for the needs of the ICT/ETI sector, and to adjust the character of scientific research to the economic needs, in order to enable development of companies based on new technologies. The internship is completed with a report, which poses one from the sources of information exploited to prepare Demonstrators of New Technologies. A task of DNT is to provide the program’s participants with knowledge in the field of a particular technology. Another stage is organization of apprenticeship for companies’ employees at the Gdańsk University of Technology.

The apprenticeship program considers selected DNT elements together with information materials and exercises allowing to get familiar with a new technology independently. Another interesting examples is operation of the Wrocław Technology Park. Major objectives of WTP cover technological support for small and medium-sized enterprises through creation of

proper working conditions, provision of a research infrastructure and performance of R&D works. Thanks to cooperation with WTP a company avoids a necessity to invest in research equipment. Research works for clients of the park are carried out on the basis of a concluded agreement. WTP provides the company with a coordinator for the research works. A significant element of cooperation is also posed by every day contacts between clients and representatives of the park. Such an operation is a part of a long-wave developmental strategy of the park, as a place for advanced research and development services for innovative business - it allows to create a group of park's members that have an adequate profile. WTP is believed to be the most advanced technological park in Poland, and it achieved success thanks to its organizational form and cooperation with Wrocław universities (forming DAIP), which proved great openness towards the partner for common undertakings. Another presented proposal is inspired with a strategy adopted by the Harvard University and Massachusetts Institute of Technology. The presented model was tested with a positive result on the Faculty of International and Political Studies of the University of Łódź, and according to its authors, it is universal, inexpensive and easy to implement. [cf. Connection..., 2013]

Its main assumptions are as follows: establishment of durable relationships between graduates and the university through a so-called nostalgic marketing, utilization of this group's potential as a natural connector with the business world, creation of cooperation with business on the level of particular departments, not the university's central office, and creation of a specialized organizational unit on each faculty (Offices for Cooperation with Business and Graduates), responsible for development and maintenance of relationships with business, and inclusion of the university employees, students and graduates into the process. A consciously developed network of relations, with utilization of the graduates' potential, contributes to cooperation between the university and the business surroundings.

This is confirmed by conclusions from implemented actions: graduates, university workers and representatives of the business world are interested in participation in actions offered by the university on clearly stated principles, and actions undertaken by the Office for Cooperation helps to create a positive image of the university in the environment. International experiences also pose examples of good practices in relationships between the sector of science and business. A good example of scientific activity within the field of innovation is Great Britain. The phenomenon of closer cooperation not only between the representatives of science and business but also between universities, is becoming increasingly more popular. - White Rose University Consortium cooperates actively in Northern England, composed of universities of Manchester, Sheffield and York. [Cooperation of employees..., 2014]

Universities in the region provide access to knowledge and human resources. Researchers activity also leads to creation of technological start-ups, based on innovations. - Young companies require special support, which a university is sometimes incapable of providing, so help is brought by scientific and technological parks operating in the university's surrounding, inspired by the consortium, e.g. Cambridge Science Park. - Parks are becoming a natural connector between science and economy.

Exchange of knowledge between universities and industrial entities, creation of demand for qualified working force, support for innovative cities and regions and promotion of innovations in the public sectors. - A developmental pioneer in scientific and technological parks in Europe is Finland. [Cooperation of employees..., 2014] these centers operate according to market principles, what forces their effectiveness and rationality. In the Finnish system, scientific and technological innovations play a role of mediators that coordinate cooperation of

three elements of innovation: the world of business, science and regional authorities. - Their task is to create an environment for development of education and scientific research, their internationalization and scientific development. - Financial outlays for support of innovations, therefore also for the R&D sector, pose a significant aspect of Finish innovation policy. In broad understanding they are not a cost but a safe investment. A role of a park cooperating with clients consists in mediating in contacts between enterprises and financiers, in selection of research and public services, in organization of various events.

Notions related to parks management are also worth emphasizing: motivating managing staff, active promotional policy, reduction of dependence on public funds and focus on acquisition of resources for development of companies - park members, being listed on a stock exchange, quick expansion and development of parks in the best locations, and cooperation with universities. The presented examples of effectively realized project may pose a signpost for those, who are willing to get involved in common undertakings of scientific centers and economic entities. Lack of mechanisms of active cooperation between a university and its surrounding impacts the quality of education, blocks creativity and results in a low innovation level. Skillful management of business and science relations brings bilateral advantages, and impacts the economy development to a considerable extent.

4. CONCLUSION

Innovation is a significant factor that determined the economic processes taking place in contemporary economy. In times of intensive technological transformations, development directions of Poland and EU support development of cooperation in the field of commercialization and knowledge application. This cooperation adopts various forms. Universities become engaged in educational, counseling projects and research initiatives more often, creating a forum for knowledge and opinions exchange. More and more entrepreneurs and managers realize that establishment of direct relationships with universities brings measurable benefits. Today, future belongs to entrepreneurial researchers and creative entrepreneurs. In conditions of a new economy it is necessary to strengthen creativity through combination of manners of operation and sharing knowledge and ideas. Establishment of cooperation between the environments of science and business is not only a challenge but also a necessity.

References

- [1] Analiza dotycząca perspektyw współpracy sfery nauki i biznesu w Stalowej Woli w oparciu o doświadczenia niemieckie (2014), red. K. Bromski, Stalowa Wola.
- [2] Bills T., Genassi Ch. (2003). *Creative Business*, New York.
- [3] Brzezinski M., Leszczynska A. (2009). Kreatywność a dynamika organizacji (in:) *Organizacja i zarządzanie* nr 1(15), Kwartalnik Naukowy wyd. Politechniki Śląskiej, Gliwice.
- [4] Clegg B. (2001). *Creativity and innovation for managers*, Oxford.

- [5] Connection- innowacyjny model współpracy uczelni z biznesem (2013). ed. T. Domański, Łódź.
- [6] Czyżewska D. (2009). Instrumenty wspierania powiązań między nauką a biznesem na przykładzie francuskiej konwencji CIFRE (in:) *Studia Regionalne i Lokalne*, nr 3(37).
- [7] Dalkir K. (2005). *Knowledge Management in Theory and Practice*. Oxford.
- [8] Francis D., Bessant J. (2003). Managing radical organizational transformation. *Management Decision*, No 41.
- [9] Korniejenko K. (2010). Możliwości dofinansowania transferu technologii i wiedzy naukowo-technicznej z jednostek naukowo badawczych do sektora MSP w Polsce (in:) *Problemy Gospodarki Światowej*, ed. Kuczmarska M., Pietryka I., Toruń.
- [10] Poznańska K. (2012). Współpraca nauki z gospodarką na przykładzie szkół wyższych na Mazowszu, (in:) *Nauka i Szkolnictwo Wyższe*, nr 1/39.
- [11] Schreyogg G. (2000). Reframing change in organization. The equilibrium logic and beyond, [in:] *Best Paper Proceedings, Academy of Management, Toronto*.
- [12] Shalley Ch., Gilson L. (2004). What leaders need to know: a review of social and contextual factors that can foster or hinder creativity. *The Leadership Quarterly*, Vol. 15.
- [13] Silver Ch. (2000). Where technology and knowledge meet. *The Journal of Business Strategy*, 11-12.
- [14] Skrzypek E. (2014). Kreatywność a zarządzanie wiedzą (in:) *Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie*, t. 24, nr 1.
- [15] *Theory of management 4* (2011). ed. S. Hittmar, University of Zilina.
- [16] *The Innovation Union Scoreboard* (2015), <http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards/index>.
- [17] West M.A. (2000). *Rozwijanie kreatywności wewnątrz organizacji*, PWN, Warszawa
- [18] *Współpraca nauki i biznesu* (2013). ed. K. Bromski, PARP, Warszawa.
- [19] *Współpraca pracowników naukowych z parkami naukowo-technologicznymi w W. Brytanii i Finlandii, Propozycja implementacji rozwiązań dla Polski* [2014], Wyd. Uniwersytet Śląski w Katowicach.

(Received 02 May 2016; accepted 20 May 2016)