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UNIVERSITY aND BUSINESS COOPERaTION IN POLaND

abstract

Nowadays, a close cooperation between science and business seems to be a necessity. Changing environment and increasing competition affect the need for continuous improvement of goods and services. Universities and research institutes are an important source of knowledge for Polish entrepreneurs. Unfortunately, in Poland the sphere of business and science does not cooperate effectively enough. With proper analysis of potential benefits of cooperation, the model of partnership between the science and business should be built. In Poland it is worth to create an atmosphere conducive to the exchange of knowledge between these two entities. In the long run, it contributes to the increase of competitiveness of enterprises and the development of parent education institutions.

Keywords: cooperation, higher education institutions, centers of innovation and entrepreneurship

In Poland the cooperation between science and business is becoming more and more important. A country without interactions between Higher Education Institutions (HEI) and business is inconceivable. This is about an environment where students are being prepared theoretically without an intimate understanding of the world they are about to enter. Scientists researching topics with no thought of the practical situations in which their research might be most needed.

Entrepreneurs not benefiting from the extensive knowledge and potential new inno-

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vations on offer from within HEIs and business not receiving new discoveries, knowledge or appropriately skilled human resources from within HEIs (*The State of European University...*, 2011).

Unfortunately, collaboration between university and business in Europe is still in the early stages of development. In accordance with the report “Study on the Cooperation Between HEIs and Public and Private Organisations in Europe” 1 out of 3 HEIs in Europe undertakes no or a very low university business cooperation (UBC) activity (*Study on the Cooperation...*, 2012).

Therefore, there are numerous advantages possible to gain by both partners, especially when it comes to cooperation between economic universities and enterprises. Innovative solutions can be tested in the field as early as possible and both sides can help to make new ideas ready for market: an optimal solution, not only for business and scientists but also for potential customers. There is an intensive dialogue between everyone involved right from the start. These types of partnerships will only come to life if customers, business and research discuss with one another on a regular basis (Welfens and Walther-Klaus, 2008, p. 1).

The whole process of cooperation should be created appropriately, in the context of project teamwork regarding a need of tangible results in order to satisfy the project principals (Prause and Venesaar, 2011, p. 149).

In Poland it is worth to recognize the importance of the role of HEIs (through education, research and innovation) in the transfer of knowledge to society and their vital contribution to Poland’s economic competitiveness.

According to the report (*Resorts of Innovation...*, 2012) entities acting in Poland in the area of support for entrepreneurship, innovation and competitiveness are named centers of innovation and entrepreneurship. Since the beginning of transformation in 1990, the number of centers of innovation and entrepreneurship increased (except during 1998–2000), reaching the mid-2010 the number of 735. In 2012, there was re-verification of support institutions on the basis of surveys and telephone interviews. As a result, 821 centers of innovation and entrepreneurship were diagnosed. Among these, there is a division into the following groups:

- 40 parks and 14 technology park initiatives,
- 29 technology incubators,
- 73 pre-incubators and academic business incubators,

- 5 business incubators,
- 69 technology transfer centers,
- 6 seed capital funds,
- 10 business angel networks,
- 86 local and regional loan funds,
- 55 credit guarantee funds,
- 319 training and consulting and information.

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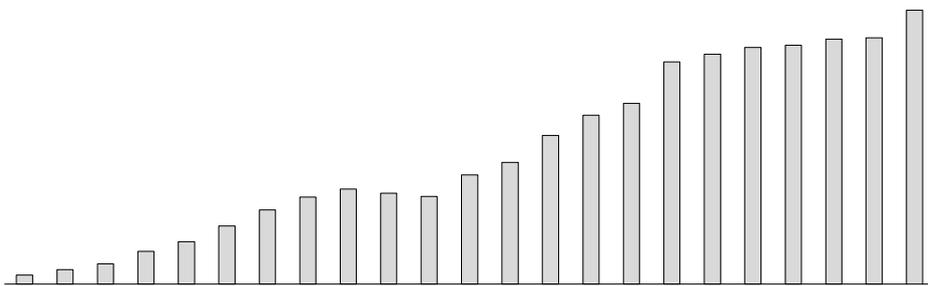


Fig. 1. The dynamics of the development of centers of innovation and entrepreneurship in Poland in the years 1990–2012

Source: *Resorts of Innovation...*, 2012.

According to the figure above, it is shown that number of centers diagnosed in mid-2012 almost doubled comparing with 2003 year. A significant change in the number of centers is the result of changes in the group of funds seed capital and technology parks and incubators. There was an extremely intensive increase of number of active centers. This was primarily due to the completion of investment in a number of parks (which were at the beginning stage for being launched few years ago).

Figure 2 presents the saturation of centers of innovation and entrepreneurship in the division of provinces in Poland. As it is shown above, the greatest saturation of such centers is in Silesia, Mazovia and Greater Poland. The smallest in the Opole province, Lubuskie and Świętokrzyskie. The number of centers is naturally associated with a size of the region and its socio-economic potential. Furthermore, the extent of regional and local authorities engagement is a decisive factor for the

formation of centers. Further increase of number of centers is expected, particularly by developing new academic centers. It is estimated that such centers will grow in the direction of service professionalization. Recently, horizontal

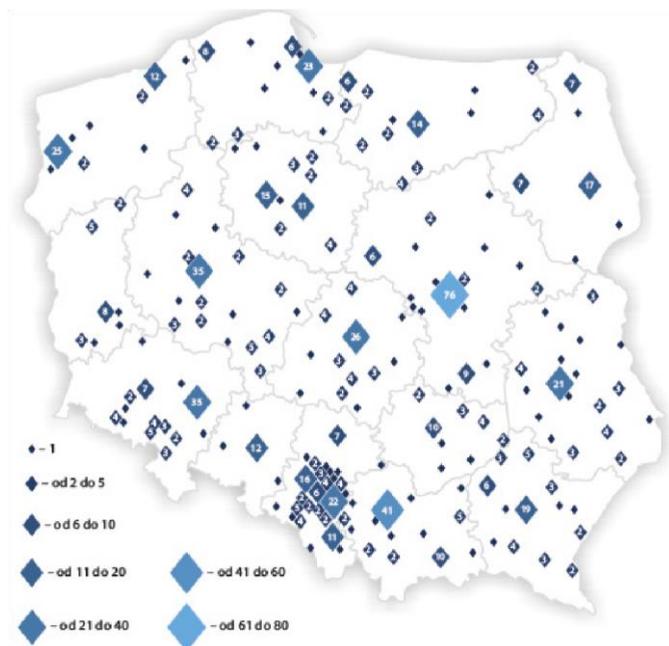


Fig. 2. The number of innovation & entrepreneurship centers in Poland in 2012 Source: *Resorts of Innovation...*, 2012.

cooperation has been developed between centers. The cooperation is: taking joint initiatives or the exchange of experiences (*Resorts of Innovation...*, 2012). It is appropriate to design standard procedures and processes of technology transfer and commercialization knowledge.

Moreover, it will be necessary to implement suitable instruments to stimulate cooperation between economic universities and business entities. In Poland, it is important to develop entrepreneurship in the interface between science and the economy. These innovative operators in the field of advanced technology are core for improving competitiveness, innovation, restructuring and modernization of the economy. Existing centers of innovation and entrepreneurship should more deal with current entrepreneurs needs. They should take new forms of action, approaching the realm of science and research market. Unfortunately, many of centers do not have enough resources for such transformation. There is a need for comprehensive government and regional policies and programs compatible with the needs of beneficiaries in the scope of strengthening the cooperation (*Resorts of Innovation...*, 2012).

Such collaboration seems to have significant impact especially on the area of economic universities operating, because of the close links with the business dimension. One of the main activities of economic universities is to educate young people in a way that best prepares them to be employed successfully. To achieve this, it is obligatory to have appropriate teaching staff that work closely with business entities.

Following advantages were given when it comes to economic universities cooperation with enterprises (*Strategia rozwoju...*, 2012):

- to implement innovative solutions,
- to improve scientists and tutors skills by engaging in business projects,
- to enhance the position of research centers.

Majority of entrepreneurs state that scientists cooperate with them only because of financial benefits leading them to carry out their scientific research. Only few of entrepreneurs are invited to conduct joint research and projects. Entrepreneurs want universities to collaborate on the basis of bilateral advantages (*Strategia rozwoju...*, 2012).

Business expectations are (Porada-Rochoń, 2012 p. 102):

- to obtain advisory support in the use of technology and science research,
- to find a field of appropriate use of new technology, – willingness to improve existing technologies and methods, – opportunity to attract prospective employees (students).

A lot of innovative solutions have been developed in research laboratories and through joint seminars. In order to be successful with an innovative idea it has to be developed into a marketable product, and this is where the companies play a role. They provide the necessary know-how, the contacts and the financing required to realize the ideas and finally put them on the market (Welfens and Walther-Klaus, 2008, p. 2).

On the other hand, economic universities have the important framework to carry out long-term testing of innovative products, which seems to be extremely necessary and useful for companies willing to check their ideas before officially introducing them to the market.

In accordance with the report “Research Innovation Performance in EU Member States and Associated Countries 2013” a competitive European economy with high-quality jobs can only be based on innovative products and services.

Economic universities may be perceived as places where ideas are tested and exchanged by giving the students possibility to try out the market feasibility of their solutions at a well-known company.

Scientists by cooperating with entrepreneurs have greater access to empirical data which later can be used in scientific research. This is relevant particularly when it comes to economic universities where market analysis and reports are useful to entrepreneurs in business management. Taking part in such business cooperation is the ability for lecturers and scientists to improve their qualification as well. It is possible for them by taking an internship at companies.

Primary advantages of business – science cooperation is shown below in Figure 3.

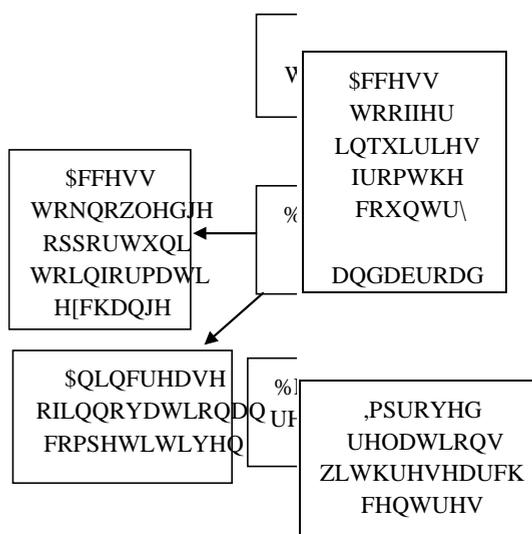


Fig. 3. Fundamental benefits for entrepreneurs to work with science Source: own elaboration based on: Porada-Rochoń, 2012, p. 43.

The results show that the most important drivers for both HEIs and academics concern their relationship with businesses. For both academics and HEIs, the existence of mutual trust, mutual commitment and shared goals are rated as essential drivers, followed by drivers relating to the UB relationship. The vast majority of academics of all levels of university – business cooperation experience agree that funding barriers and bureaucracy within Higher Education Institutions are the most relevant barriers (*Barriers and Drivers...*, 2011). Typical examples of barriers are listed below in Table 1.

Table 1. Barriers in Polish university – business cooperation

Types of barriers	Examples of barriers
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Financial	<ul style="list-style-type: none"> – high costs of innovation efforts – difficulties in obtaining external grants and their high fees – limited access to risk capital
Dependent on limited business' internal opportunities	<ul style="list-style-type: none"> – lack of appropriate trained staff team and employees with enough competencies – entrepreneurs with sufficient conviction about enough competitiveness of their products – no need to introduce some changes and improvements
Information	<ul style="list-style-type: none"> – lack of information on the sources of funding – lack of information on public support – lack of knowledge in the field of intellectual property protection – lack of knowledge about the opportunities that entails cooperation with HEIs
Limited potential of B & R area	<ul style="list-style-type: none"> – low funds for the development of innovation and collaboration between business and science – passive stance of the university on relations with companies – low value of research and publication in some academic institutions
Legal and administrative	<ul style="list-style-type: none"> – invalid legislative of intellectual property – complicated legislative process of launching of technology on the market

Source: based on: *Efektywna współpraca...*, 2012, pp. 159–161.

The greatest hindrance is budgetary and cost barrier, which means lack of entrepreneurs' funds on development and research and problem of getting money from external institutions. Entrepreneurs often do not know the sources of possible funding. They are not informed in the area of public support. Furthermore, companies represent lack of knowledge about the opportunities that entails cooperation with Higher Education Institutions.

In accordance with report done by Ministry of Science and Higher Education Implementation and Innovation Department (*Barriers of Cooperation...*, 2006) one out of five entrepreneurs do not know about the opportunities of collaboration with scientific environment. It is difficult to speculate on the possible causes of this situation, although in Poland, there is no tradition of entrepreneurship based on innovation and there are a lot of problems with communication between these two spheres: business and science.

By the existence of a structured model of cooperation between science and business it is possible to reduce these barriers and strengthen the collaboration in many areas.

By building the frame of co-operation between universities and business, each party seeks to theoretically different aims and this is why there are many business models. The most important effect of private companies is to achieve measurable gains, whereas research centers can not only work for the development of theoretical ideas and theories, but must also generate a certain revenue to stay in business services, education and research (*Efektywna współpraca...*, 2012, p. 37).

The most common business models for carrying out research projects include (*Efektywna współpraca...*, pp. 37–43):

1. Services on behalf of the model – a university performs research projects aimed at creating usable in practical solutions. This involves the preparation of the technical documentation and design of a project.
2. Subsidy model using the results of research by economic operators – conducted research is useful to companies, but it is funded by public institutions. Most of funds comes from European Union Funds. In this form of cooperation, the entrepreneur must make the changes resulting from the project.
3. Model of the project in the science-business cooperation – both parties (science and business) do not have sufficient resources and they are not willing to take a big risk of failure. The two parties are equally involved in the project.
4. Model of companies managed by entrepreneurs and scientists – deeper commitment of capital and higher risk borne by both parties of the cooperation than in previous model. This form is useful when the independent activities of the new entity will bring more profit than other solutions and the founders want to give to the company all of their responsibilities and competencies related to the management of capital.
5. Model of research and development companies – establishment of a separate entity which is solely involved in research and development activities. This new entity is engaged in research for the company's founder and does not cooperate with players competing against the founders.
6. Model of university spin-off – establishment of companies, which are caused by the creation of resource-based entities separate from the university. In this model, a group of faculty members who want to do business is necessary to exist. The great barrier to the introduction of this type of projects

is the reluctance of the scientific community to use university resources to pursue personal interests of a group of enterprising scientists.

The above mentioned types have different uses. The choice of model depends on the scope and frequency of audits. Another decisive factor is the result expected from the grantor. Both parties should understand mutual expectations, establish rules of cooperation and then choose an appropriate model of cooperation.

To sum up, it is a core issue especially for Polish economic universities to put greater emphasis on practical aspects of education in order to better prepare young people to enter the labour market.

In order to establish and develop university – business collaboration in Poland, it should be maintained a constant business cooperation with scientific institutions in the country. Companies by employing well-educated and trained scientists establish and engage the cooperation.

Moreover, entrepreneurs in Poland should broader cooperate with other companies on scientific and technical areas. Furthermore, Polish companies should allocate more funds for the purchase of technical licenses and research and development area and develop innovative business strategy for development.

While economic and other universities should focus more actively on cooperation with companies, they should be better prepared and informed about how to cooperate with companies and what they can offer by having a more extensive range of scientific and technical solutions and commercializing more intensely the results of their scientific research.

Economic universities ought to strive for establishing permanent cooperation agreements between science and business in Poland in order to jointly share mutual benefit of cooperation.

The main challenge for the Polish economy is still to enhance investment and innovativeness of Polish business and foster closer cooperation between the business sector and HEIs. There is no innovation between transfer of knowledge. This transfer should occur strongly between economic universities and companies with understanding of mutual benefits and economic satisfaction for both sides.

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