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The mobility of researchers as a manifestation of academic entrepreneurship based on the example of the University of Gdansk

1. Introduction

Universities are institutions that play a special role in creating the knowledge society and the social responsibility of these institutions is of exceptional importance (Leja 2013, p. 188). The satisfaction of social expectations, the process of internationalising higher education, technological progress, the commercialisation of research results, the search for innovative solutions, providing high-quality education, cooperation with the community in particular with the business sector and public administration are just some of the challenges that the modern university faces. Glabalisation and social life commercialisation change the role and place of the traditional university in modern world. These factors induce the university to become more entrepreneurial organization (Boguski 2009, p. 27). Academic entrepreneurship means: searching for changes and taking advantage of them (Drucker 1992, pp. 36-37). The purpose of this paper is an attempt to identify a manifestation of academic entrepreneurship based on the example of

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the University of Gdansk. The article is based on literature study, an interview that was carried out on 19.01.2016 with head of the Department of Science and International Cooperation at the University of Gdansk and annual reports of the University of Gdansk's vice-chancellor for 2006-2014. The article presents activities and initiatives taking place at the University of Gdansk. They exemplify a manifestation of academic entrepreneurship. Foreign trips by the University of Gdansk researchers and trips by foreign researchers who visit the University of Gdansk are not only conducive to create interorganizational networks, but also give possibility to exchange experience and participate in international scientific programmes in which business partners are also engaged. The result of these actions is innovation solutions development. Innovations are the basis of creating knowledge economy.

2. The essence of entrepreneurial university

Etrepreneurship is a complex and multifaceted concept (Nowak, Musiał 2005, p. 220). It is an object of interest of many disciplines and it is dependent on numerous circumstances, particularly economic, institutional, legal, psychological, social, cultural, historical, geographical and climatic (Majkut 2005, p. 58). Researchers define entrepreneurship as an attitude, behaviour, process (Piecuch 2010, p. 37) a feature of personality or function (Nowak, Musiał 2005, p. 222). Entrepreneurship is identified with both innate features of a person (in particular sharpness of mind, intuition, ability to make difficult decisions, intelligence) and acquired knowledge. Entrepreneurship defined as a function means searching for new ideas and technologies, adjusting to changes and unconventional problem solving (Nowak, Musiał 2005, p. 222). Entrepreneurship may be expressed in creating innovation – new products, services, way of production process (Penc 2004, p. 135). Academic entrepreneurship consist in setting up spin – off firs, creating and selling know – how (Poznańska 2014, pp. 164-165).

Entrepreneurial behaviour may be characterised by (Kwiatkowski 2000, pp. 24-26):

- possibilities to act globally – researchers, who move from one research institute to another, increase the possibilities to identify chances in surroundings,
- knowledge and relation diversification – researchers, who move from one research institute to another, deepen their knowledge and create relations,
- aspirations to develop researchers abilities.

Universities are increasingly moving away from the traditional model, based on close relations with the state. Globalisation and the commercialisation of

social life have contributed to a weakening of the position of the state, which is the main source of funding for universities, and have accelerated the process of finding alternative funding for universities. Close relations between science and business are associated with challenges for universities. Universities have to handle with creating entrepreneurial behaviour among researchers, developing knowledge and technical solutions and initiating network relations with enterprises (Matusiak, Matusiak 2007, p. 156). Universities have started to become like companies, which in addition to carrying out teaching activities also have business relationships with enterprises (Boguski 2009, pp. 25-28). However, a university should not be a company, but rather an entrepreneurial university – an intellectual institution open to the economy, and this cannot limit its autonomy and freedom of scientific research and education (Denek 2013, p. 18). B. R. Clark (1998, pp. 5-8) summarises five characteristics of entrepreneurial universities, which are:

- a strong steering core – universities that strive to implement change must act faster, more flexibly and put more emphasis on recognising the expectations flowing from society; the role of a steering core consists not only in controlling enterprises, but also in stimulating researchers to put forward an initiative,
- a developmental periphery – universities that want to implement changes need to introduce a mechanism to facilitate the establishment of relations with society; it may be helpful in this case to appoint special organisational units that help exceed the traditional boundaries between a university and the society around it,
- a diversified funding base – changes require additional financial resources; universities should become less dependent on state funding by developing alternative sources of financing, in example they may gain funds from enterprises, local government or copyrights,
- a strong academic heartland – entrepreneurial university should consist of fundamental units (steering core) and additional research units which help to gain alternative financing resources,
- integrated entrepreneurial culture – entrepreneurial university should create its positive image, uphold a tradition and settle the terms of cooperation between researchers and students.

J. Olearnik (2009, pp. 25-28) points to four attributes of the entrepreneurial university:

- an economic and financial orientation, which is reflected in the adoption of economic efficiency as one of the main objectives of university policy. Not only

revenues, costs, financial results but also the spending of funds allocated from the state budget constitute the criteria of economic efficiency; an economic and financial orientation is achieved by including objectives in the university's strategy to achieve effectiveness, diversification of sources of financing current operations and the development of the university and a positive financial result,

- a market orientation – manifested in establishing and maintaining relationships with partners in the labour market, the educational services market and the scientific research market; actions taken to meet the requirements of a market orientation should include: monitoring the fate of university graduates, establishing relationships with business partners and introducing new majors and specialisations that are adapted to changes in the labour market,
- an innovative orientation – a university fulfilling this criterion: extends its educational offer by new courses, specialisations and postgraduate courses, ensures a high level of technical support for teaching and research, and also extends its network of contacts with foreign partners,
- a managerial orientation – assumes using modern management techniques; meeting the requirements of a managerial orientation means: the effective functioning of a university's financial management system, implementation of marketing activities, a modern system of internal and external communication and the creation of an incentive system for employees to encourage pro-innovation attitudes.

A.D. Meyers and S. Pruthi (2011, p. 351) maintain that academic entrepreneurship is important for universities, faculties, students and all stakeholders served by a university. At the same time, they indicate many reasons why universities should adopt entrepreneurship as a key value in guiding their actions:

- it promotes the fulfilment of the mission to develop innovation,
- it tells stakeholders that they have an impact on the creation and dissemination of the cherished values in cooperation through the university's cooperation with society,
- it contributes to the development of the commercialisation of research results,
- it promotes efforts to gain a competitive advantage in the competition for talented university students,
- it provides students access to knowledge, develop their skills and abilities, regardless of their place of employment and the direction of their careers,
- it is a response to market needs,
- it promotes the development of creative thinking in the performance of numerous tasks.

To sum up, the basic objectives underlying the entrepreneurial university concept are the development of pro-innovation and entrepreneurial attitudes among staff and students, raising funds from external sources, searching for external specialists necessary for the implementation of the research & development work, enabling employees to participate in projects carried out for the needs of business, establishing relationships with the community and building networks of cooperation (Boguski 2009, p. 28).

3. The mobility of researchers in the knowledge economy

The modern university performs numerous tasks that revolve around: maintaining the historical and cultural continuity of a nation and creating patterns of human behaviour and citizenship, creating, understanding, communicating and disseminating knowledge (Denek 2013, p. 8). Knowledge is immaterial resource. Contrary to traditional factors of production, knowledge may be used in different places at the same time. Moreover using knowledge in different organizations may bring distinct effects (Sopińska 2010, pp. 89-90). Knowledge is a special resource which value is not exhausted through its use. It is a source of prosperity and social security (Duderstadt 1997, p. 79). In knowledge economy modern technologies and knowledge gain in importance. While material resources, labor force, technical infrastructure diminish in importance. They are replaced with qualified employees, higher education institutions, research centres and informatics infrastructure. Human capital creates the knowledge economy (Sopińska 2010, pp. 31-32). Researchers qualifications can be improved thanks to participation in programmes supporting the mobility of scientists. In a knowledge economy, these programmes are extremely important for the completion of the research and academic mission of a university. The purpose of the community research program Marie Sklodowska-Curie Action (MSCA) is to support researchers at every stage of their careers. The program supports mobility for both doctoral students (support for 25,000 doctoral students is planned up to 2020) and experienced researchers. Another area supported by MSCA is the elimination of cross-sector barriers, mainly between science and business. The following initiatives have been implemented as part of the program (http://ec.europa.eu/research/mariecurieactions/about-msca/actions/index_en.htm, 16.01.2016 – access date):

1. Innovation Training Networks (ITN) - the aim of the training is to train young researchers. Projects carried out under ITN may take the form of: European Training Networks (ETN) – as part of training conducted by academic

and non-academic institutions researchers have the opportunity to gain experience in various sectors through the implementation of joint research projects; European Industrial Doctorates (EID) – the project is coordinated by academic institutions and businesses, which enables doctoral students to develop their skills both on and off campus; European Joint Doctorates (EJD) carried out by at least three academic institutions.

2. Individual Fellowship (IF) – the program is designed for experienced researchers applying for research and training grants. Researchers have the ability to use the grant in the European Union (European Fellowships) or outside the European Union (Global Fellowships).
3. Research and Innovation Staff Exchange (RISE) – establishing professional contacts, exchange of knowledge and skills of employees of universities, research institutes and businesses through short-term exchanges.
4. Co-Funding of Regional, National and International Programmes (COFUND).

In 2007-2014, 468 Polish researchers participated in the international exchange of researchers, while 1079 people took part in initiatives (including ITN, IF) supported by the MSCA. Poland is ranked seventh among 28 countries. In the ranking the first place is occupied by Italy (5352 researchers), second is Spain (4088 researchers), third is Germany (3762 researchers) followed by the United Kingdom (3454 researchers), France (3411 researchers) and Greece (1720 researchers) (http://ec.europa.eu/research/mariecurieactions/fundedprojects/statistics/index_en.htm,16.01.20-16 – access date). An analysis of the statistics shows that in Poland the use of support programs for researchers appears to be non-dispersed. In most of the statistics cited, at least twice as many researchers from Western European countries benefit from support programs.

4. The mobility of researchers at the University of Gdansk

On 19.01.2016, an interview was carried out with Katarzyna Świerk PhD– head of the Department of Science and International Cooperation at the University of Gdansk. The department has been operating in its current form since May 2015, combining the tasks performed by two sections: the staff development and scientific research section and international cooperation section. "It was our idea to unite in one department many tasks that are implemented together, so the Department of Science and International Cooperation brings together two sections that are equally important for

the development of the university linked directly with researchers," adds K. Świerk. The staff development and scientific research section is responsible for: the coordination of activities relating to the submission of applications for awarding degrees and academic titles, issuing diplomas, internships, and sabbatical leave, coordination of activities relating to applications for funds for research (for statutory activity, for grants for young researchers, for research infrastructure and dissemination of research results), cooperation with the Technology Transfer Centre for the commercialisation of research results. On the other hand, the international cooperation section concentrates on: supporting departments at the signing of agreements on foreign scientific cooperation, cooperation with the Office for Academic Recognition and International Cooperation, assistance in organising the foreign trips of researchers and doctoral students, as well as providing support for researchers and foreign guests in organising arrivals at the University of Gdansk as part of programs and projects with national and international funding, and sharing of information on foreign scholarships and their conditions. The duties outlined above do not cover all the tasks carried out by the Department of Science and International Cooperation, part of the duties of which are carried out in cooperation with other departments, because as Świerk states, "With such a large organisation there is no rigid segregation of duties; it is often the case that we cooperate with three or four departments."

Establishing cooperation with foreign researchers and research centres takes place on two levels. On the one hand, collaborative relationships are initiated by researchers, e.g. during a conference. These informal contacts give rise to formal agreements on bilateral cooperation. Moreover, letters of intent are sent to foreign centres informing them about our openness to cooperation – our readiness to conduct joint research and exchange scientists and students. "First there is informal contact – establishing the need for cooperation and a legal framework for it", explains Świerk. The second stage of in the development of inter-organisational relations is the formal path resulting from the joint implementation of government and international programs.

The annual reports of the University of Gdansk's vice-chancellor provide statistics on the mobility of researchers. The number of Polish researchers and doctoral students from the University of Gdansk travelling to foreign research institutions in 2006-2008 are presented in figure 1.

In 2007, a considerable increase in interest among researchers from the University of Gdansk in travelling to foreign scientific institutions was observed.

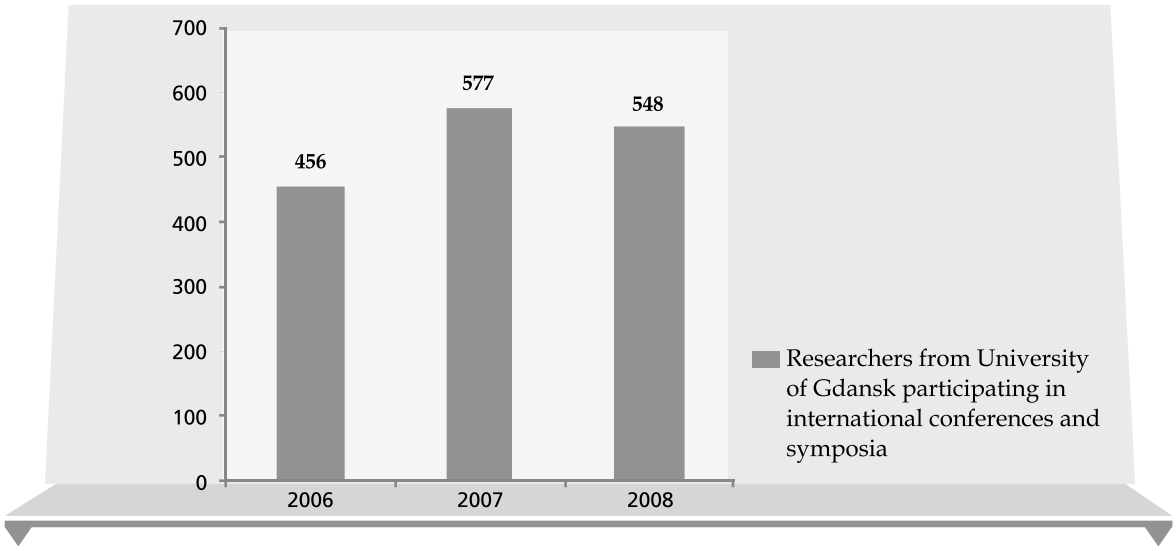

Figure 1. Foreign trips by University of Gdansk researchers in 2006-2008

Source: own study based on annual reports of the University of Gdansk's vice-chancellor for 2006-2008, http://ug.edu.pl/strona/18353/sprawozdania_i_oswiadczenia, 23.01.2016 - access date

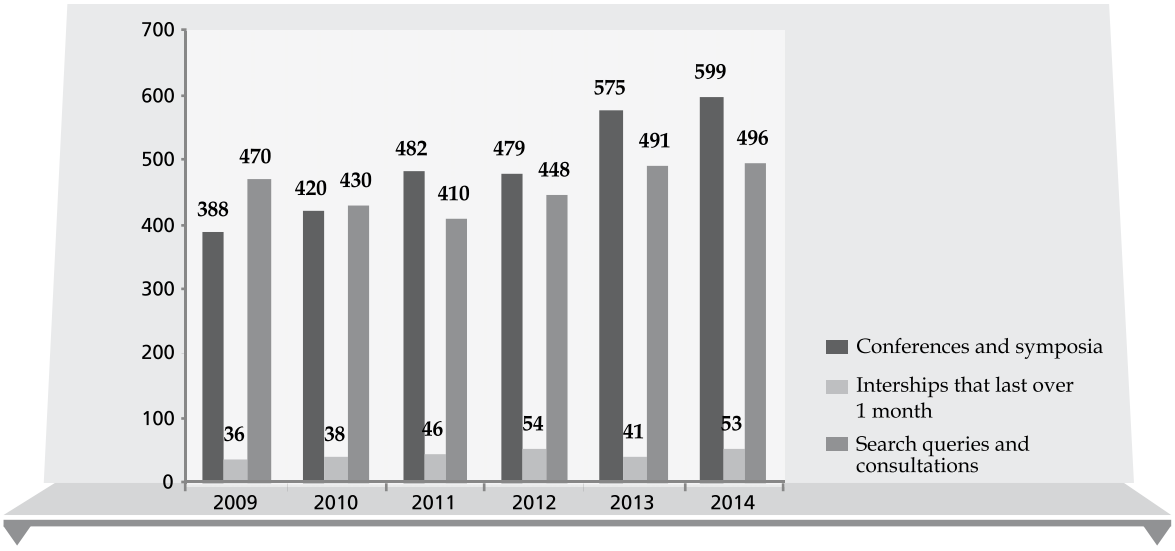

Figure 2. Foreign trips by University of Gdansk researchers in 2009-2014

Source: own study based on annual reports of the University of Gdansk's vice-chancellor for 2009-2017, http://ug.edu.pl/strona/18353/sprawozdania_i_oswiadczenia, 14.03.2016 - access date

In comparison with 2006, the number of researchers participating in international conferences and symposia increased by 121 people.

Data on the foreign trips of researchers from the University of Gdansk for 2009 – 2014 are presented in figure 2.

Interest among Polish scientists in travelling abroad in 2009-2014 is rising. In 2014, compared to 2009, the number of researchers interested in travelling on conferences and symposia increased by 211 people. Interest in travelling on interships is gradually increasing, but it seems that this form of cooperation with foreign research units is non - dispersed. In analysed period the interest in travelling on interships increased from 36 people in 2009 to 54 people in 2012. The interest in participation in search queries and consultations is on an invariable level. Each year about 500 people participate in search queries and consultations. As pointed out by Świerk, interest in placements abroad is growing, above all in the group of employees with a PhD. "Sometimes there are over a thousand registered trips a month. Sometimes there are fewer. I can confirm that there isn't a week when nobody leaves. These are usually trips to conferences, weekly or two-week stays," added Świerk.

By contrast, figure 3 shows numbers of foreign researchers who came to the University of Gdansk in the years 2006-2014.

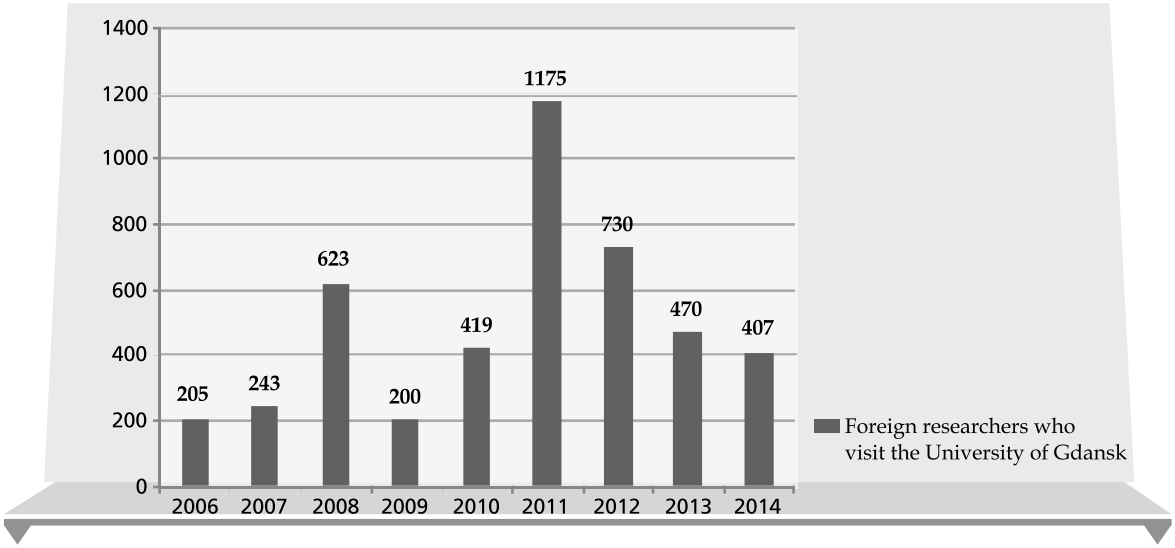

Figure 3. Numbers of foreign researchers who came to the University of Gdansk in the years 2006-2014

Source: own study based on: annual reports of the University of Gdansk's vice-chancellor for 2006-2014, http://ug.edu.pl/strona/18353/sprawozdania_i_oswiadczenia, 14.03.2016 - access date

Figure 3 shows a surge in the number of foreign scientists interested in coming to the University of Gdansk in 2011. In 2011, compared to 2006, almost three times as many scientists from abroad visited the University of Gdansk, the number of visitors increased from 200 people to 1175 people. Simultaneously, since 2012 a decrease in the number of foreign scientist interested in coming to the University of Gdansk is observed. In 2014 only 407 foreign researchers visited Poland.

Each year, the university signs new scientific and teaching agreements with foreign institutions. In 2009, 9 such agreements were signed and 15 in 2014. (annual reports of the University of Gdansk's vice-chancellor for 2009-2010,(http://ug.edu.pl/strona/18353/sprawozdania_i_oswiadczenia, 14.03.2016 – access date). Cooperation between polish and foreign researchers is crucial part of actions undertaken at the University of Gdansk.

Figure 4 shows numbers of research topics conducted by polish and foreign researchers.

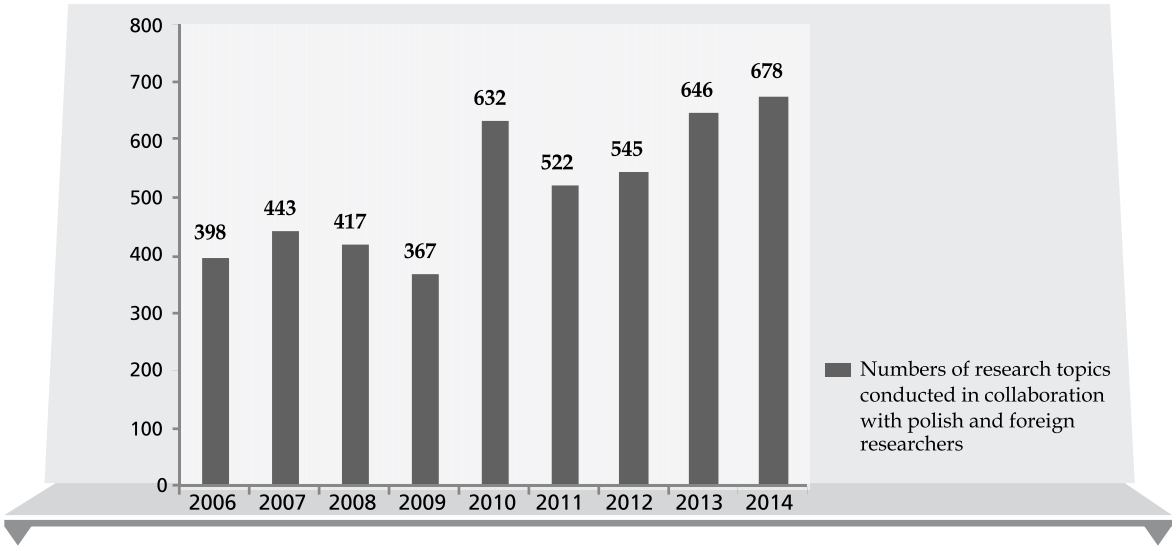

Figure 4. Numbers of research topics conducted simultaneously by polish and foreign researchers at the University of Gdansk in the years 2006-2014

Source: own study based on: annual reports of the University of Gdansk's vice-chancellor for 2006-2014, http://ug.edu.pl/strona/18353/sprawozdania_i_oswiadczenia, 14.03.2016 - access date

Since 2011 gradually increase numbers of research topics conducted simultaneously by polish and foreign researchers from 522 topics to 678 topics

in 2014. In the years 2006-2014, 4648 research topics were realized by polish and foreign researchers.

K. Świerk underlines that foreign researchers working with the Fulbright Foundation are regular visitors to the University of Gdansk. Among the reasons they give for choosing Poland as a place to conduct their research are the ability to benefit from research infrastructure, research by the University of Gdańsk in areas of interest, the geographical location of Poland in the centre of Europe making it possible to travel quickly between European countries as well as economic considerations. K. Świerk also emphasises the high degree of openness of foreign researchers in contacts with the University of Gdansk. Those coming to Poland not only carry out their research, but also participate in guest lectures, as well as initiate meetings to disseminate the results of their research and talk about their scientific interests with students. "We are an open university," said K. Świerk. Thus, questions and initiatives concerning cooperation by foreign scientists who seek support in carrying out research do not remain unanswered.

5. Conclusions

It seems that the creation of a department to assist University of Gdansk staff in arranging trips to foreign research institutions, as well as openness to cooperation with foreign centres and hospitality shown to foreign researchers allows the University of Gdansk to move closer to B.R. Clark's idea of an entrepreneurial university. In particular, characterized actions refer to B. R. Clark's concept concerning a peripherial development. At the University of Gdank a Department of Science and International Cooperation was established. The department supports researchers in their career development. The growing culture of entrepreneurship and innovation at the University of Gdansk can be observed in the flexibility shown by various departments when carrying out complex tasks related to foreign trips of scientists, the initiation of contacts with foreign research centres, the positive attitude to projects proposed by researchers and the openness to change. Carried out analysis does not exhaust the subject, on the contrary, it is an introduction to debate about entrepreneurial university idea.

Summary

The mobility of researchers as a manifestation of academic entrepreneurship based on the example of the University of Gdansk

In the knowledge economy the mission of a university, besides

high quality teaching, is scientific research and the search for innovative solutions. This paper refers to an interview with the Head of the Department of Science and International Cooperation at the University of Gdansk and annual reports of the University of Gdansk's vice-chancellor for 2006-2014. Initiating cooperation with foreign research centres, the mobility of researchers and the ability to implement international research shows that the university is striving to become an entrepreneurial university.

Keywords: *the mobility of researchers, entrepreneurial university.*

Streszczenie

Mobilność naukowców jako przejaw przedsiębiorczości akademickiej na przykładzie Uniwersytetu Gdańskiego

W gospodarce opartej na wiedzy misją uniwersytetu jest obok dbałości o wysoką jakość nauczania, również prowadzenie badań naukowych i poszukiwanie innowacyjnych rozwiązań. Niniejsze opracowanie odwołuje się do wywiadu przeprowadzonego z Kierownikiem Działu Nauki i Współpracy z Zagranicą Uniwersytetu Gdańskiego oraz Sprawozdań rocznych rektora za lata 2006-2014. Inicjowanie współpracy z zagranicznymi jednostkami naukowymi, mobilność naukowców i możliwość realizacji międzynarodowych badań przedstawia tą uczelnię jako otwartą w dążeniach do realizacji koncepcji uniwersytetu przedsiębiorczego.

Słowa kluczowe: *mobilność naukowców, uniwersytet przedsiębiorczy.*

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