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IMPLEMENTATION OF TRIPLE HELIX MODEL FOR MANAGEMENT OF NETWORK RELATIONS IN THE INNOVATIVE PROJECTS

The cooperation between university, business and public sectors in development of innovative projects which are one of main factors determining growth of knowledge based economy is becoming very important. The paper details application of triple helix model as a tool that enables implementation of knowledge based projects, as well as their effective management thanks to network relations – a mechanism for cooperation, sharing knowledge and information. The triple helix model could be used for the analysis of innovative projects to describe a unique configuration of relationships between three sectors: university, business and public – as a dynamic of knowledge based system. Due to exchange of information and coordination of cooperation in considerable portion the knowledge is accumulated outside the university, which enables fast transfer of innovations to business operations. The project eGovBus co-financed under 6FP of UE could be shown as an example of such activities.

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INTRODUCTION

The Lisbon Strategy [1] imposed to member states of European Union (EU) the goal to develop to the year 2010 the competitive, knowledge-based economy that could come up with global competition, especially from the U.S. In Poland the main funds for the development of knowledge based economy are coming from EU and national sources. The Lisbon Strategy assumes that the financial support for research and development (R&D) sector will in 2/3 come from the external sources. In 2004 the R&D sector in Poland was financed in 67,7% by the state funds. The business sector designated for this purpose 22,6% of total expenditures. To finance R&D sector in 2004 Poland used only 5,2% from foreign sources, including EU money. In EU-25 the share of national budgets funds in total R&D expenditures amounted to 35%, whereas the business participated in 54,3% [2]. Based on the above figures one could assume that the cooperation of Polish R&D sector with business is not adequate for the needs of national economy. Polish national development programmes as well as EU 7 Framework Programme for Research and Development underline the need to intensify the cooperation between university and business sectors in order to create innovative projects that will strengthen the competitiveness of national economy. There are supported projects of high diffusion factor, which scientific results could be easily transferred into business practice. However in 2005 only 5,93% of funds for Polish R&D sector were devoted to this purpose [2]. Thanks to such funds not only the business, but also public sectors could gain from external knowledge developed in innovative projects by R&D, while the university sector could finance the researches of significant importance. Thus it is important that in implementation of researches co-funded from EU should participate not only university but also business and public sectors. Only the close cooperation will enable the development and fast transfer of knowledge in form of innovative solutions into both private and public practice.

1. PROBLEMS WITH COOPERATION BETWEEN SECTORS IN CREATING INNOVATIONS

In Poland, as in other EU member states there exists a lack of coordination, cooperation and exchange of information between the academic, business and administration sectors. Institutions connected with the business environment, especially academic – research, do not have sufficient contacts with other sectors,

which results in a lack of mutual understanding. Numerous research ideas or carried out research projects are not a reaction to needs or problems of other sectors. On the other hand, the business sector does not see a need of using external sources of knowledge [3]. Currently most projects carried out by academic-research institutions are ended on a basic research level.

However most innovative projects should finally be commercialized. This goal can be achieved if carried out research projects will be focused on the needs of the final users. The scientific world should look for inspiration for new break-through research in areas of interest of their future final users. Newest research shows, that 70%-80% of new products are not a success not because of a lack of advanced technologies, but a lack of understanding of needs of users [4].

Denmark as one of the first countries in 2005 announced a national program with one of the main priorities being „enforcing innovation focused on the user”. One of the initiatives of this program was the creation of the Danish Laboratory of Innovation Focused on the User at the Copenhagen Business School. This laboratory uses an approach created by the Massachusetts Institute of Technology which is aimed at supporting cooperation between academic experts from Danish business schools and innovative Danish companies such as Bang&Olufsen, LEGO or Novo Nordisk. This laboratory creates new methods of innovation, which are afterwards tested in partner companies [5].

In many companies we are dealing with vaults of unused own patents and technologies, which could be commercialized. Cooperation of the academic, business and administrative sector could enable exchange of knowledge resting in these three place. The added value created from relations between these sectors would create new possibilities of creating innovations and commercializing them. Ideas for innovation, often known as “Rembrandts in the attic” need only analysis and a new look at them, to rediscover their value [6].

2. TRIPLE HELIX MODEL

In the development of a knowledge based economy and perception of innovation, we can observe a process in which there is a shift from single projects to a complexity of actions that create new products, models, technologies and services. Innovative processes run in a specific arrangement of links encompassing companies, academic research institutions and nongovernmental institutions and public administration and civic initiatives. Additionally there is a growing role of codependences between the dynamics of creating and developing innovations in the private sector, and

organization and development of the public sector and availability of specialist financial instruments.

In 1995 Etzkowitz and Leydesdorff [7] used a triple helix model to determine the dynamics of relations between university, business and administration. A justification for this model was a innovative regime based on knowledge. Under specific conditions, this systematic new order of overlapping communication can be expanded and presented as an independent organization. In this way, the triple helix model becomes appropriate to present various behaviors in a network.

A benefit of using the triple helix model can be its approach to various research scopes. It can be used to study specific configurations in university – business – administration relations as a form of dynamics of a system based on knowledge. The institutional configuration in a knowledge based innovation system can be perceived as an expression of three, functionally connected sub dynamics of competitive systems: a dynamic of generation of wealth by an economy through exchange, knowledge based dynamics of reconstruction and innovation and political and managerial need for control over relations [8]. The success of these three functions should not be however treated as individual relations between business, academic and administrative sectors. These institutions should create a new meaning for mutual relations.

3. MANAGEMENT THROUGH COORDINATING NETWORK RELATIONS

Contradictory aims of the elements constituting triple helix model often lead to the conflicts between sectors in subject. Commercially oriented companies are interested in the continuous innovation and implementing solutions with less risk assigned to them. Hence the companies most often seek innovations that will enhance the area that they are already engaged in and not the projects that would lift them to the new business reality. The business sector prefers the projects that allow for fast implementation and are conceived as a reaction to the current needs. The scientific society is also interested in researching the continuous innovations but more partial to long term research and very complex attitude that slows down the implementation process, which is difficult to accept by business. The conflict between the scientific approach and the needs of administration are related to the Governmental programs orchestrating financing of innovative projects. The framework preferred by the Government often do not cover the areas that are most attractive to scientists. At the same time projects that are going to produce some results only after several years gain financing. This is in opposition to the business sector which presents more pragmatic attitude.

Abovementioned conflicts can be reduced through interactions and better understanding of the interdependencies between the governmental agencies, scientific and business sectors. This will permit for improving effectiveness of the Consortium as a whole. Creating the balance between the dominant Consortium member and the remaining partners will allow for avoiding the conflicting situations and impartial treatment of their pursuits. The Consortia engaging in the research activities need strong leadership and leaders that are capable of bounding the partners and pursuing the successful communication. Project managers need to gain the partners and support in all of the three of listed above sectors.

Managers coming from the business sector and scientists, though brilliant in the technical matters often forget about spreading their knowledge and communicating with the “outer world”. Preoccupied with the tasks not relations these managers often destroy the possibility to build really strong and enhancing adherence within Consortium. Lack of proper communication hampers transfer of knowledge and does not allow for sharing experiences, in effect leading to reduced possibility to transform the conceptions into innovations. If there is insufficient interaction within Consortium, and furthermore various Consortia do not share the details related to their work among themselves and possible users, the moment that their work is presented is very often the time when the product is finished, the resistance of the unprepared future users may put at risk the very implementation of the project effects.

4. e-GOV-BUS AS AN EXAMPLE OF THE SUCCESSFUL IMPLEMENTATION OF THE TRIPLE HELIXA MODEL

eGov-Bus project is implemented under the priority 2 “Information Society Technologies” FP6 UE. The Consortium is coordinated by Rodan Systems SA and comprises 8 partners representing the scientific, commercial and governmental sectors (table 1). The Project has started on the 1 January 2006 and its duration is 2 years [9].

Table 1. The eGov-Bus Consortium

Partner	Country	Sector
Rodan Systems S.A	Poland	Commercial
Centre de Recherche en Informatique Appliquée – Paris	France	Science
Europäisches Microsoft Innovations Center GmbH	Germany	Commercial
Uppsala University	Szwecja	Science
Polish Japanese Institute for Information Technology	Polska	Science
Axway Software	Francja	Commercial
Secure Information Technology Center	Austria	Commercial
Ministerstwo Spraw Wewnętrznych i Administracji	Polska	Government

Source: <http://www.rodan.pl/badania/egov/>, red on 12.11.2006

The idea behind the Project is to design and develop a prototype of the IT system which will support governments in handling the “life events” of citizen (such as the registration of the child, starting the company), or enterprises being serviced by several governmental organizations within the European Community. The eGov-Bus project work is concentrated on development of the mechanisms, that will allow e-Government to support the citizens by delivering the new and integrating the existing services that will satisfy the required by the governmental systems security requirements.

e-GovBus Project is an example of the work where the aims of the scientific, governmental and commercial sectors are well balanced. The Government plays the double role: not only of the financing body but also of the beneficiary. Scientific society works on innovative solutions, while the commercial companies benefit from the transfer of knowledge. The successful project implementation is likely to give the commercial companies also the possibility to get profit from implementation of the developed tools.

CONCLUSIONS

In the process of development of knowledge based economy it is important to create and implement researches that in frames of innovative projects as a key factor assume the cooperation between university, business and public sectors.

The triple helix model is tool that enables implementation of knowledge based projects, as well as their effective management thanks to network relations – a mechanism for cooperation, sharing knowledge and information.

The project eGovBus could be an example of activity managed by the network relations in frames of triple helix model. Thanks to exchange of information and coordination of cooperation in eGovBus the knowledge is accumulated outside the university and that enables fast transfer of innovations to business and public operations.

BIBLIOGRAPHY:

1. URZĄD KOMITETU INTEGRACJI EUROPEJSKIEJ: *Strategia Lizbońska – droga do sukcesu zjednoczonej Europy*. Warszawa, wydanie pierwsze, maj 2002
2. MINISTERSTWO ROZWOJU REGIONALNEGO: *Program Operacyjny Innowacyjna Gospodarka, 2007-2013*. wersja z 12.12.2006r.
3. LEWIATAN: *Polska a gospodarka oparta na wiedzy - w kierunku zwiększania konkurencyjności Polski w UE*. Raport PKPP Lewiatan, Warszawa, 2005.
4. MOSS- KANTER R.: *Innowacje – klasyczne pułapki*. Harvard Business Review Polska Nr 2/2007
5. HIPPEL E.: *Nowe źródło innowacji skoncentrowanej na użytkowniku*. Harvard Business Review Polska Nr 2/2007
6. SCHRAGE M.: *Algorytmy na strychu*. Harvard Business Review Polska Nr 2/2007
7. ETZKOWITZ H., LEYDESDORFF L.: *The Triple Helix – University – Industry – Government Relations: A Laboratory for Knowledge Based Economic Development*. EASST Review No. 14, 1995.
8. LEYDESDORFF L.: *The Mutual Information of University – Industry – Government Relations: An Indicato of Triple Helix Dynamice*. ASCoR, 1999.
9. RODAN SYSTEM S.A.: <http://www.rodan.pl/badania/egov/> , przeczytane 12.11.2006r.