The Innovation System Operating in the West-Transdanubian Region from the view of the Supporting and Background Institutions

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Abstract

This study was written about the regional innovation system operating in the West-Transdanubian region. My goal was to explore the area's capabilities, innovation potential, business relationships and social networks existing among the economic actors i.e. the most important factors which influence the members' competitiveness. I am examining the role of the University of West-Hungary in the knowledge generation and technology-transfer processes, research and development activities and training of the skilled workforce whether it meets the expectations of local companies or not. I intended to identify specific fields to joint-actions between the university and the potential partners from the business sector participating in cluster initiatives operating in innovative industry branches. The survey based on 21 interviews made with cluster managers and representers of supporting and background institutions in the West-Transdanubian region and the result will be detailed and summarized in this paper.

Keywords: strengths / weaknesses / University of West-Hungary / cluster

INTRODUCTION

It is important to recognize that the economic competitiveness of a country is determined by the performance and adaptability of the companies operating in the given circumstances (Chikán-Czakó 2002). A firm or a region competes on the basis of what they have which is unique in relation to their competitors. A strategic perspective in the contemporary global economy is, thus, how to develop such unique competencies and resources in order to foster competitiveness (Porter, 1990). Firm-specific competencies and learning processes can lead to regional competitive advantages if they are based on localized capabilities such as specialized resources, skills, institutions and share of common social and cultural values (Maskell and Malmberg, 1999). The increased focus on regions as the best geographical scale for an innovation-based learning economy points to the importance of specific and regional resources in stimulating the innovation capability and competitiveness of firms. For example, Porter argues (1998) that the enduring competitive advantage in a global economy is often heavily local, arising from a concentration of highly specialized skills and knowledge, (formal) institutions, related business and customers in a particular region. The concept of regional innovation systems has no commonly accepted definitions, but usually is understood as a set of interacting private and public interests, formal institutions and other organizations

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that function according to organizational and institutional arrangements and relationships conducive to the generation, use and dissemination of knowledge (Doloreux, 2003). The basic argument is that this set of actors produce pervasive and systemic effects that encourage firms within the region to develop specific forms of capital that is derived from social relations, norms, values and interaction within the community in order to reinforce regional innovative capability and competitiveness (Gertler, 2003). The popularity of the concept of regional innovation systems has been increased by the emergence of successful clusters of firms and industries in many regions around the world (Enright, 2001) and reflects the importance attached to the role of learning and social milieu in social development and economic growth.

For more than a decade the contemporary economy has been described as 'knowledge-based' where knowledge, learning and innovation are the most important factors for competitiveness in the globalization. Also, in the knowledge-based society innovation is basically understood as an interactive learning process, which is socially and territorially embedded and culturally and institutionally contextualized (Lundvall, 1992). Since regional systems of innovation may be defined as the localized network of actors and institutions in the public and private sectors whose activities and interactions generate, import, modify and diffuse new technologies, different types of networks, for example clusters provide the best conditions to promote the innovation processes.

Small and medium-sized enterprises intend to become parts of global value chains therefore they try to participate in different kind of cooperations for example in vertically integrated networks called supplier networks of foreign multinational companies to compete with larger companies on international markets. However, there is an other possible type of regional concentrations existing besides supplier networks which can be the aim of SMEs as well. This is called industrial cluster and it requires the creation of horizontal linkages among the members parallel the vertical cooperation, because this type of collaboration relies on close, regular contact and face-to-face interaction of the actors. Industrial clusters are spatial concentrations of business and related institutions with activity specialization and active cooperation linkages among cluster members where the significance of face-to-face contacts and personal demonstration, exchange of experience, and role of geographical proximity for knowledge transfers and innovation are basic conditions (Szanyi-Iwasaki-Csizmadia-Illéssy-Makó 2010). These organizations were defined by Michael Porter as well whose original definition for clusters is as follows: “Clusters are geographic concentrations of interconnected companies, specialized suppliers and service providers, firms in related industries, and associated institutions (for example universities, standards agencies, and trade associations) in particular fields that compete but also co-operate” (Porter, 1990, p.199). Industrial clusters are characterized by the high degree of division of labor but if this attribution is completed by the gepographical proximity it results in regional clusters as a very efficient form of co-opetition which means the coexistance of cooperation and competition. Regional clusters can be defined as local dominant industrial sectors with significant export activities and flexible structures enable them to be viable on the global markets (Lengyel-Deák 2002).

The systems of innovation approach claims that firms do not innovate in isolation, but interact with other organizations (Edquist, 2005). As universities are important and useful generators of knowledge they become crucial partners in innovation activities (Coenen, 2007) and the public sector (especially the universities) should take a more active role in

collaborating with business actors traditionally associated with basic research, education and peer-review. I was curious whether the University of West-Hungary fulfills the mentioned requirements or not therefore I examined the institution's relationships with the other actors of the innovation system to identify the areas where collaboration and joint-actions can be imagined and realized. The result will be summarized in 3 parts which will be followed by the conclusions.

1. THE SWOT ANALYSIS OF THE WEST-TRANSDANUBIAN REGION

The SWOT analysis is a useful methodology which is employed in the business world as a tool assisting in strategic planning. From this analysis corporations, businesses, and project managers can develop "tactical" or operational strategies aimed at correcting identified short falls, and expanding strengths. The SWOT matrix which can be prepared on the regional level as well provides a background analysis for the organizations operating in the examined area to investigate the regional potentials highlighting the strengths (S), weaknesses (W), opportunities (O) and threats (T) they have to face. More SWOT-analyses have been made in the West-Transdanubian region but I am demonstrating the version which was outlined by the respondents. In the framework of the TÁMOP 4.2.1./B. project I visited the representers of the most significant supporting and background institutions including *the West-Transdanubian Regional Development Agency Non-profit Limited Liability Company, the Pannon Novum West-Pannon Regional Development Agency, the Pannon Business Network, the Chamber of Trade and Commerce of Sopron, the Hungarian Intellectual Property Office, the Micro-regional association of Sopron and Fertőd, the Zala County Foundation for Enterprise Promotion, and the 2 new institutions working within the University of West-Hungary and playing a very important role in the regional innovation processes i.e. the Technology-Transfer Office and the ERFARET Non-profit Limited Liability Company*. In addition to the mentioned organizations I made interviews with the managers of the selected cluster initations as well including *the IT Cluster of the Sopron Region, the* Sopron Region *Logistics Cluster Association, the Pannon Textile Cluster, the Pannon Mechatronics Cluster, the Pannon Renewable Energy Cluster, the Regional Pellet Cluster, the Pannon Wood & Furniture Cluster and the West-Pannon Eco-cluster.*

It is very important to know how the actors of the regional innovation system perceive and evaluate the economic and social background of their operation. What kind of factors have to be faced by them and have the biggest effect on their activities influencing their decisions for example related to the survival of the small and medium-sized enterprises in the lack of capital and to these actors' effort to compete with the large multinational companies increasing their market shares and their demand. The 1st table contains the most important capabilities of the West-Transdanubian region from the point of view of the respondents. One part of these factors can be evaluated positively, these are the strengths of the region and can be utilized on the basis of favorable external effects (possibilities). The other part causes a lot of difficulties to the organizations depending on that where these factors originate. One part arises from internal sources and can be influenced by the decisions of the actors because they can prepare to defend against them (these are the weaknesses) while the other part comes from external sources (threats) decreasing the chance of the successful operation.

1. table. The SWOT-analysis of the West-Transdanubian region

STRENGTH	WEAKNESSES
• Exceptionally good geographical environment (European transport axises, natural waterways, region bordering 4 countries) • Wide range of natural, cultural and built heritage, favourable tourist facilities (rural tourism in particular by utilizing thermal water). • Tradition of co-operative systems, open-minded thinking (e.g. clusters; town network, local collaborations, wide range of cross-border and international co-operations) • Traditionally strong and large institutions of intermediate and higher education (concentreted knowledge) • The region's conditions are highly favourable for utilizing renewable energy. • High degree of biological multifariousness, natural and near-natural scope and landscape structure, high forestation, rich wildlife. • Regional organizations are highly receptive, open-minded and have the ability to initiate innovative solutions. • Tradition and competitive knowledge in the wood-industry • One fifth of the Hungarian live trees can be found in the region • There are more than one thousand enterprises operating in the wood, forest and furniture industries within the region • More than half of the R&D expenses is paid for technological researches	• Big distance from the capital city (Budapest) • Huge differencies between the development of the counties (Győr-Moson-Sopron county is one of the most developed county of Hungary while Zala county has a lot of depressed area) • Clusters operating based on the traditional Hungarian industries are not supported by the government • The West-Transdanubian region is one of the less promoted regions in Hungary because its metrics reflect its favourable status (which is relative) • An innovation paradox can be experienced in the region: the performance is outstanding but the number of the researchers and the expenses of innovation are low (thanks to the dual corporate structure) • The innovation and the research&development activities are in initial phases • The West-Transdanubian region has to compete with the Austrian border regions • The circumstances of the establishment of enterprises are not adequate • The motorway is missed • The workforce is more expensive in Hungary than in the Eastern-European countries • Mistrustful people, too much fight and competition, complicated administration, overlaps
OPPORTUNITIES	**THREATS**
• Favourable conditions for the utilization of exceptional geographical potentials • Intensifying cross-border cooperations and tourism • Real opportunities to the R&D processes and to the innovation. • In the spirit of "forever learning strategy" the training, adult training and higher education can be integrated to a network-based regional system. • Changing of people's thinking - increasing demand for environmentally friendly and bio products, adaptation of natural materials in the nutrition and in the wood- and furniture industry too • The proximity of the Western markets and the export opportunities are offered	• lack of customer orientation • after the transition of the Hungarian economy a lot of foreign enterprises settled down in the country bringing their technologies, workforce, experiences and methodologies but they fragmented and resulted in small enterprises without capital to their function • the conomic recession had the strongest negative effect on the wood and furniture industry • the customers' distorted preferency which prefers the expensive foreign products instead of the Hungarian with a good quality and price • lack of management skills and culture • low degree of Internet usage and e-commerce • strong dependency on the foreign capital and investors • the shape of the region is unfavourable (it does not have a center)

Source: own editing (based on the interviews especially with the managing director of the Zala County Foundation for Enterprise Promotion)

In the second part I am examining the efficiency of the University of West-Hungary which happens on two levels. First I am exploring whether the institution fulfills the

requirements related to the quality of its educational services or not and after that I intend to identify the areas where collaborations can come into existance with the business sector and the supporting and background institutions.

2. THE RESPONDENTS' OPINION ABOUT THE CURRENT LABOUR MARKET SITUATION AND THE EDUCATIONAL SERVICES OF THE UNIVERSITY OF WEST-HUNGARY

The majority of the respondents agreed with that the University should take a bigger part in the knowledge generation and the technology transfer processes than before even if it participates in the most cluster initiations and try to keep in touch with the other actors of the regional innovation system. Despite its activity in the business life a big part of the innovation is realized without serious cooperation between the enterprises and the educational institutions which requires scientific capabilities and a big amount of invested capital from the poor small and medium-sized enterprises. According to the interviewed managers the region does not devoid of the high-qualified graduated job seekers but they can not be characterized with a marketing and customer-oriented thinking and foreign language knowledge which is necessary nowadays. An other but also serious problem is that the Hungarian higher educational system enables the students to spend a lot of years at the universities and acquire more qualifications without real practical knowledge. The supply of the technicians is adequate but a lack can be experienced from turners, glass industry professionals, carpenters, upholsterers, hairdressers, beauticians, mechanical and electrical engineers, IT professionals, electricians, pipe fitters, chefs and waiters. Half of the professionals trained in Hungary work in Austria and enhance our neighboring country's economic performance because of the high salaries. Some professions at the universities try to be made practical by inviting external lecturers and seminar leaders from the real life to share their experiences and modern technological methods using in the production or in the corporate governance but the students have to be prepared for the realization of their tasks before they are employed and it can be led back to the lack of practical and up-to date knowledge of the students. One part of the firms refuses to accept trainees but major of them is open-minded and pays attention to the training of the potential workforce. They recognize their own interest i.e. to teach the young generation to meet their expectations and fulfill their requirements but they have to face the problem to motivate the students who have no targets and diligence and it causes them difficulties as well to make contact with the University as a big and complex institution. Some organizations have been established to mediate between the academic/research sector and the business sphere (for example the Knowledge and Technology Transfer Office and the ERFARET Ltd.) but more similar institutions should be created and a bigger attention should be paid to the advertising and popularization of them. One of the biggest strengths of the region is the knowledge concentreted in a 200 km radius circle thanks to the presence of the famous, prestigious universities for instance the University of West-Hungary in Sopron, in Mosonmagyaróvár and in Szombathely, the István Széchenyi University in Győr, the Pannon University in Keszthely and in Veszprém, the Faculty of the Budapest Business School operating in Zalaegerszeg not to mention the University of Wien, Bratislava and Graz. The number of the institutions is satisfying and the academic staff is high-qualified but sometimes the materials which they teach are out-of date and too theoretical. The students need to learn the theoretical approaches developed on the expectations of the enterprises to meet the requirements of today's economic challenges supplemented with the practical application of them. The Faculty of Wood Sciences and the Faculty of Forestry have a very special and unique position in Hungary because these are the only places in the country where engineers

are trained in the mentioned disciplines and the fact that these institutions do not have competitors does not mean that they can afford to ignore the urge to renew and develop.

The University of West-Hungary has the possibility to turn into the blood stream of the regional economy more because it has unused capacity in the field of adult education, the training of the CEOs and the unemployed people (the University should contract with the Employment Center and organize accredited trainings) and we are not allowed to forget the research and development capabilities which are available but has not been utilized yet. The shared view of the respondents was that the University should find the link with the enterprises and the supporting and background institutions offering and representing the research directions and ongoing projects just as the plans in the future and should be more open to the collaboration and flexible to the changes.

Finally I outline some possible areas to co-operation between the University and the companies operating in the region and participating in cluster initiations representing once successful traditional industries with a lot of difficulties but dedicated actors who try to cope with the international competition on the global markets.

3. POSSIBLE AREAS OF COLLABORATION BETWEEN THE UNIVERSITY OF WEST-HUNGARY AND THE LOCAL ENTERPRISES

The energy and the environmental protection are very important areas for every company beacuse it is their interest to learn new procedures and energy-efficient processes in the production. The question of the utilization of biomass and especially wood waste removed from the plants raises in connection with the timber companies. The aim of these enterprises is to use only that part of the timber which is not appropriate to be applicated in other different methods. Interesting area can be except of the mentioned to ensure the energy supply from own power. In the framework of the nanotechnology and material sciences a lot of possibilities emerged in the cooperation of the University and the business sector related for example to the treatment of the leather armchairs and couches and the various processing of the tropical tree species. The innovative technologies are important because of the adaptation of the CNC system while the intelligent products point forward to the future and draw the attention of the researchers to the liquid timber. Particularly important area is the eco-innovation which means that only natural materials are used in the furniture industry including the employment of natural binders in the production of the furniture boards and creation of new substances with the involvement of the university. It would be useful as well if the university prepared and continuously up-dated a commodity-potential survey on the micro-regional level and the institution joined the development of the agripellet devices and the creation of new agripellet recipes.

CONCLUSIONS

The survey highlighted that the University of West-Hungary has a positive social judgment and try to pay attention to the maintenance of its existing relationships with the other actors of the regional innovation system but it has a lot of unutilized potentials both in the education and in the research. The awareness of the institution could be improved and the supply of the services should be advertised more.

ACKNOWLEDGEMENT – I wish to thank the TÁMOP 4.2.1.B-09/1/KONV-2010-0006 project that it created the opportunity to make the survey and summerize the results in the conference.

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