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CROSS-BORDER INNOVATION PROCESS WITHIN
THE EU ECONOMY

The problem which is in focus of the paper is how to avoid economical imbalance caused by non-EU countries, which are transition countries, when entering the EU. The authors' hypothesis is that cross-border innovation centre could be a platform of innovation activities between the EU members and non-EU states. They have done a survey in cross-border regions: Vojvodina in Serbia and South Great Plain in Hungary. The analysis of the results gives suggestions related to cross-national spread of innovation. The contribution of the paper is a new model of cross-border innovation centre as a unique EU innovation platform which would help to homogenize the EU economy.

Keywords: innovation; cross-border; model; transition countries; EU; harmonization.

JEL codes: O31, O32, O38, P25.

Міряна Краняц, Веселін Дічков, Урош Сікіміч
ТРАНСКОРДОННИЙ ІННОВАЦІЙНИЙ ПРОЦЕС
В ЕКОНОМІЦІ ЄС

У статті розглянуто проблему зниження економічного дисбалансу, що викликається новими країнами при їх вступі до ЄС. Передбачено, що транскордонний інноваційний центр може стати платформою для інноваційної діяльності між країнами-членами ЄС і країнами, які не є членами ЄС. Проведено дослідження в суміжних регіонах: Войводині в Сербії і Великій південній рівнині в Угорщині. Результати дослідження стосуються міжнародного поширення інновацій. Побудовано нову модель транскордонного інноваційного центру як унікальної для ЄС інноваційної платформи, що сприятиме встановленню економічної однорідності в зоні ЄС.

Ключові слова: інновації; транскордонний; модель; країни з перехідною економікою; гармонізація; ЄС.

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ТРАНСГРАНИЧНЫЙ ИННОВАЦИОННЫЙ ПРОЦЕСС
В ЭКОНОМИКЕ ЕС

В статье рассмотрена проблема снижения экономического дисбаланса, вызываемого новыми странами при их вступлении в ЕС. Предположено, что трансграничный инновационный центр может стать платформой для инновационной деятельности между странами-членами ЕС и странами, которые не входят в ЕС. Проведено исследование в смежных регионах: Войводине в Сербии и Большой южной равнине в Венгрии. Результаты исследования касаются межнационального распространения инноваций. Построена новая модель трансграничного инновационного центра как уникальной для ЕС инновационной платформы, которая будет способствовать установлению экономической однородности в зоне ЕС.

Ключевые слова: инновации; трансграничный; модель; страны с переходной экономикой; гармонизация; ЕС.

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1. Introduction. The XXIth century brought big changes into the capitalism world, especially in Europe and USA. Usual flows of products, capital and working force started to be misbalanced. The prime request of capitalism, to produce more and more, and to increase profit with always growing rate was impossible to follow. Mass production of products, even customized according to consumer's demands, was not sufficient. For the first time a new phenomena appeared: mankind doesn't need increasing production, but strives towards new ideas, innovative products, services, processes. This all come in the worst moment for the European Union. The EU has just incorporated new members that makes this Union weaker and in position being obliged to harmonize economically the EU area.

The problem which is in focus is how to avoid economical misbalance which these countries cause when entering the EU. They bring their bad economies which disrupt continuity of the EU economy. This causes solving of their problems only when they become members within the society of developed EU countries.

The basic issues of this paper are:

The research object: Innovation as tool of the EU economy harmonization.

Hypothesis: Cross-border innovation centre could be a successful platform of innovation activities between the EU members' and non-EU states.

Research tasks: To set up a new model of cross-border innovation centre by using survey of innovation attributes.

Methodology: Survey made by using online questionnaires. About 100 respondents from Vojvodina and 100 respondents from South Hungary answered the questionnaires. Data collecting, analysis and benchmarking are used to make conclusions.

The paper proceeds as follows. The next section deals with literature review. The methodology is presented in the third section. The forth section explains the way the authors conducted the research and the empirical results with the analysis. The last section contains conclusions and suggestions for future research.

2. Literature review. Global economy is getting more and more turbulent. This is an environment in which organizations function. Such an ever changing environment is permanently unstable. Strategic innovation at the base of the economic pyramid is different from strategic innovations in developed countries. Innovation is capable of creating enormous market value (Anderson, Markides, 2006). Creativity, innovation, and initiative facilitate transformation to future states. The growing significance of these values will create an increasing importance of use of psychology as a factor that makes society able to compete globally (Rank, Pace, Frese, 2004).

There are many papers and books dealing with innovations, most of them focusing on corporate innovation. Some discuss that most business firms in advanced economies use only a fraction of their innovation potential. They suggest a new organizational form which is the collaborative multiform network. This organization would incorporate certain futures of innovative organizations along with some new necessary strategies, structures, capabilities and managerial philosophy (Miles, Miles & Snow, 2005).

Continuous innovation is not a natural process which occurs automatically within an organization. It is the result of active management and engagement with workers in an effort to initiate and sustain momentum (Cole, 2001). Human force is in the focus of innovation (Lessem, Schieffer, 2010). Distributed innovation is a mechanism

to govern innovations (Lessem, Schieffer, 2010). Some authors, like Zander and Solvell find cross-border innovation as an important process, but analyze only cross-border innovation within multinational companies and don't use wider approach of regional concept. They find that there is the emergence of cross-border innovation in the multinational corporation to avoid duplication. Such an international process would identify diversification of capabilities and ensure faster development of companies based on innovation. This increases the importance of international innovation network (Zander, Solvell, 2000).

There is Oslo Manual with its third edition published in 2005, which discusses regional view of innovation and gives some rules how to create regional innovative strategies regarding to necessity to have consensus of policy makers and those involved in issue of regional innovation (Oslo Manual, 2005).

Cross-border regional innovation model uses knowledge exchange system configured of two subsystems: knowledge exploration subsystem and knowledge exploitation subsystem (Vang, Asheim, Coenen, 2008).

An important issue of European future is to harmonize its area focusing on economy. Sufficient economic development should be a base of common social and cultural activities and will ensure joint future of this new alliance. Problem addressed by the paper is a big difference in the level of development between old EU member states, countries which entered the EU during the last decade and countries which will become EU members soon. Many European documents are aimed to reach these requirements. European harmonized economy which is requested must be the result of new approach having in focus innovations in all human activities.

How to assist "newcomers" to enter the EU as equal members and not as states whose entry will likely require additional efforts in the protection of the EU economy: pre-accession assistance of the European Union through various funds which finance projects could be a good financial resort for innovation projects of transition countries (Kranjac, Henny, Sikimic, 2012). The EU has to succeed to control flow of European financial support by investing in innovative projects which should ensure European innovative future (Kranjac, Henny, Sikimic, 2012).

The paper uses European directives for increasing innovation level by supporting cross-border innovation regional concept (Regional Innovation Strategies under the European Regional Development Fund, 2002) and directives for elaborating regional innovation strategies (Innovating regions in European network, 2005).

3. Methodology. The research performed was financed through IPA (Instrument of Pre-accession Assistance) Hungary-Serbia cross-border program, second call for proposals. It is justified that the innovation strategic planning should be done in both regions by realising the cooperation with the neighbouring region and by harmonization and optimal exploitation of resources. The research was done for the South Hungary region, called South-Great Plain region, and North Serbia part, called Vojvodina.

Innovation strategy in the South Great Plain region was made in 2004. There has not been a regional innovation strategy in Vojvodina yet. The South Great Plain strategy does not pay attention to cross-border innovation relations that are also important. The aim of this project was to fill these gaps by creating:

a) Supplement of the South Great Plain innovation strategy in relation to the Vojvodina regional innovation system;

b) Transmission of the South Great Plain regional innovation strategy as a benchmark planning methodology;

c) Commencement of strategic planning in Vojvodina by elaborating Vojvodina regional innovation strategic concept based on pilot sample.

The target groups of the project are primarily the stakeholders who participate in the link of innovation (SMEs, universities, research institutions, industrial enterprises) and those who have unquestionable role in the aspect of competitiveness of the region. However, in a larger context the society who produces and utilizes the results of innovation, including the researcher community and the final consumers, is also concerned.

Benefits of the performed project will be:

- Strategic preparation for the accession of Serbia to the EU (as model for other non-EU countries);

- Defining the possibilities of breakout to reach economic growth;

- Discovering cross-border cooperation in the field of research and development;

- Exploring possible cooperation;

- Enlarging the range of innovation services and counselling of bridging organizations;

- Increasing commitment of stakeholders to innovation;

- Defining operational priorities in national resource planning;

- Defining possible big projects and their cross-border characteristics;

- Realizing innovation in the society.

The regional innovation strategic planning has many diversified but well-trying and applied throughout the EU methodology. In general, each planning method starts with the elaboration of a questionnaire and a primary survey. Since the South Great Plain regional innovation strategy has a well defined and implementable methodology, it is applied for:

1. Processing of planning methodology of the South Great Plain Innovation Strategy as a curriculum;

2. Organizing training to Vojvodina participants;

3. Elaborating common (on-line) questionnaire;

4. Sampling based on 100-100 questionnaires;

5. Creating a common database for innovative participants;

6. Statistical analysis of questionnaires and drawing appropriate conclusions;

7. Preparation of the strategy.

Hungary: completion of the South Great Plain Innovation Strategy with relations, cooperation, and common planning points of innovation system of Vojvodina as a region;

Serbia: creating the Vojvodina Regional Innovation Strategy;

Common: defining the main points of the innovation strategy concerning the two regions.

The current project aims at the common strategic development, which concurs with the strategic target of the programme is to develop the two regions in a harmonic, cooperative and sustainable way, while also taking the business, educational and R&D targets into consideration. The project is to reach the following: reduced isolation of border areas by improving cross-border accessibility; synergies and cooperation in the economy; intensified cultural, educational and research interaction.

Concerning the medium-term goals the following objectives have to be mentioned:

Increasing the cooperation between border regions: the objective comprises the increase in business connections, joint investments, and strengthening of cooperation between organizations and institutions.

The sample for the online research was made from:

a) organisations which need innovations: SMEs, big companies, public institutions, local authorities, government of Vojvodina and its units;

b) organisations which offer innovation services:

- universities, R&D institutions, consulting agencies;

c) organisations which transfer innovations ("bridging"):

- innovation centres, scientific parks, industrial networks, regional innovation agencies, chambers of commerce, business centres, technological parks, clusters, banks and financial institutions.

The research was done through the following steps:

1. Creating the database of the respondents with general data and contact data;

2. Creating the bilingual questionnaire;

3. Primary data collection;

4. Creating of database;

5. Statistical analysis of primary data;

6. Statistical analysis of secondary data;

7. Conclusions.

All questionnaires were sent by email. In the cover letter it was explained that the research was a subject of an IPA CBC project, and definitions of some basic terms from the field of innovation were given.

4. Empirical results with analysis. Questionnaire in Serbia consists of two groups of questions:

1. Questions related to design of regional innovation strategy of Vojvodina.

2. Questions related to design cross-border innovation strategy for unique region of: Vojvodina in Serbia and South Great Plain in Hungary.

There were sent:

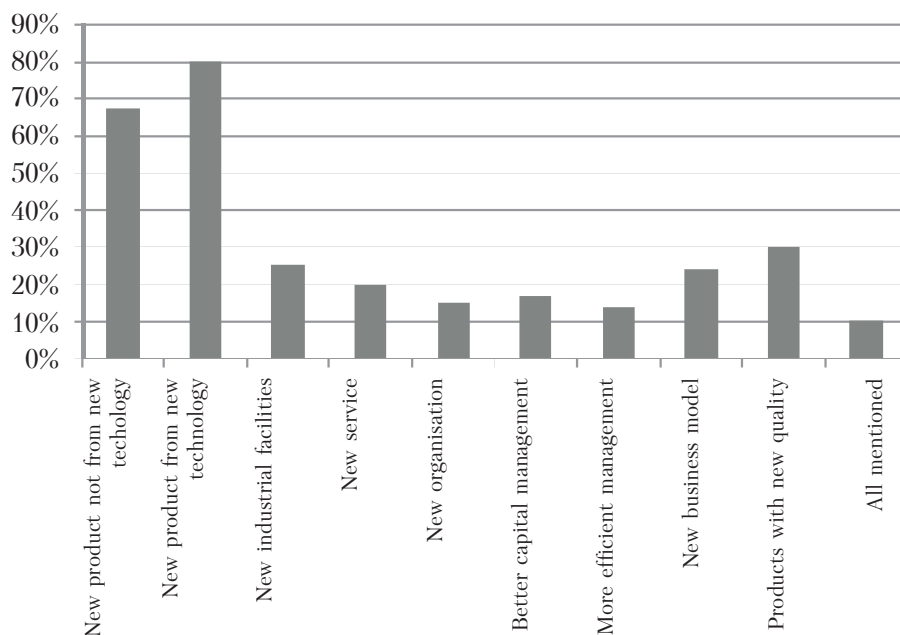
- 550 lists in Hungary (answered 110, that is 20%);

- 620 lists in Serbia (answered 106, that is 16%).

4.1. Analysis of the questions related to design of regional innovation strategy of Vojvodina. Analysis of the answers to some questions which build a picture about the level of innovation knowledge in Serbia will be presented in this paper.

- What does your firm consider "an innovation" to be?

The analysis of the answers shows missing knowledge about core substance of innovation. Most respondents, 80%, include only new products into the term "innovation". Only 14% point that more efficient management could be a possible innovation platform. Some of them, only 10% consider all (management, organisation, services, products etc.) as potential sources of innovativeness.



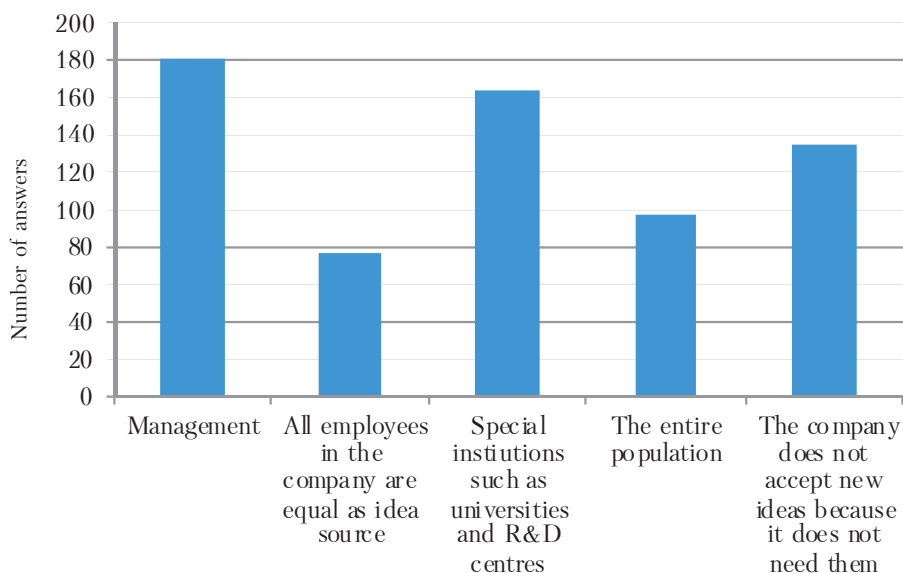
Source: Authors.

Figure 1. Structure of the answers to the question: What does your firm consider "an innovation" to be?

- What are the sources of innovative ideas in your company?

Most responses referred directly to the management as an important source of innovation, as shown in Figure 2. This reflects the passivity of employees waiting for their management to generate progress and to solve problems of companies' sustainable development. They regard themselves, employees, as not enough, or better to say, the least responsible for innovation as the base of the company's future. The reasons for this could be discussed having in mind significant number of answers which show that companies (meaning: management) don't accept suggestions of working force which should be a visible base of information, inventiveness, initiatives. Workers are not stimulated to be a part of innovation process, they regard their ideas as needless for management. They wait for special institutions regarded as "innovation suppliers" to input innovations into the company's life.

4.2. Analysis of the questions related to design of regional innovation strategy of Vojvodina. A separate group of questions is related to cross-border aspects of innovation. Namely, how innovation process doesn't recognize borders as limits. It should be analysed within wider territory. As Vojvodina and South Hungary have many similarities, innovation should be considered within the cross-border context. Some issues as: demography, culture, history, working habits, resources are similar between these two regions. The big difference is Hungarian belonging to the EU and better economical perspective.



Source: Authors.

Figure 2. Structure of the answers to the question: **What are the sources of innovation ideas in your company?**

Such a consideration brings to the point that two regions must joint trace common innovation strategic actions, to reach better competitiveness and future prospective of the cross-border region. Practically, first cross-border projects were initiated by the EU through CARDS program in 1990.

The following part presents the vision of cross-border innovation flow of examinees.

- Are you participating/or have participated in a cross-border innovation project?

Experience with cross-border projects is very, very low. Only 15% have it (Figure 3). This shows that it is necessary to increase awareness of possibilities of such cooperation for the whole region.

- Do you support cross-border study programmes?

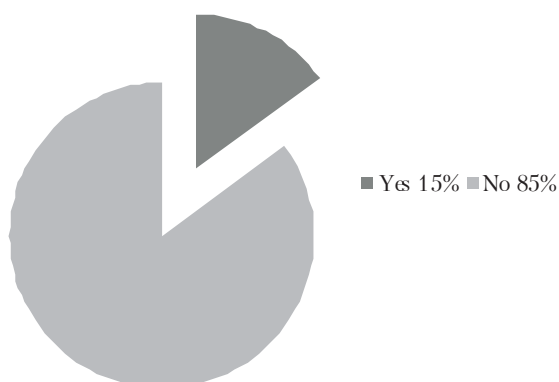
As shown in Figure 4, the majority supports cross-border innovation study programmes. This leads to the suggestion to create joint study programmes from the area of innovation which would help to initiate and push innovation activities strongly. These programmes could be for young students but also for adults, in the form of life-long learning.

- Have you ever thought about cross-border innovation activity?

This question supports our explanation of the need to improve knowledge about innovation and building awareness and institutions for innovation capacity building. Figure 5 shows that only 23% of the examinees have ever thought about cross-border innovation activities.

- Do you support creation of a joint database on innovation potential resources (innovative firms, experts, suppliers, tools etc.)?

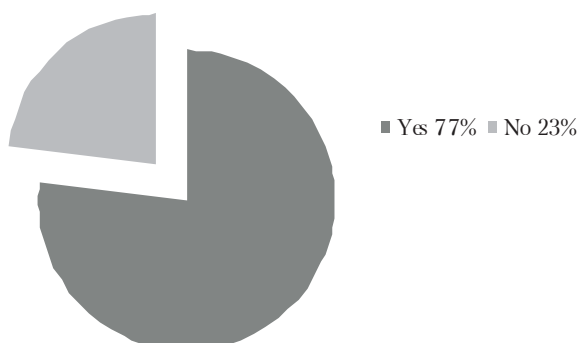
Are you participating/or have participated in a cross-border innovation project?



Source: Authors.

Figure 3. Structure of the answers to the question: Are you participating/or have participated in a cross-border innovation project?

Do you support cross-border study programmes?



Source: Authors.

Figure 4. Structure of the answers to the question: Do you support cross-border study programmes?

Almost all (92%) who answered to the questions support idea of having joint innovation databases (Figure 6). They will offer a pool of innovation experts, trainings, resources available to all stakeholders.

- Do you support cross-border SME associations (clusters)?

The results show that 90% of the organisations support establishing and functioning of cross-border clusters which could join interests of all the subjects in both countries thus creating new value. Exchanging of problems and ideas will result in new quality which will increase competitiveness of the region.

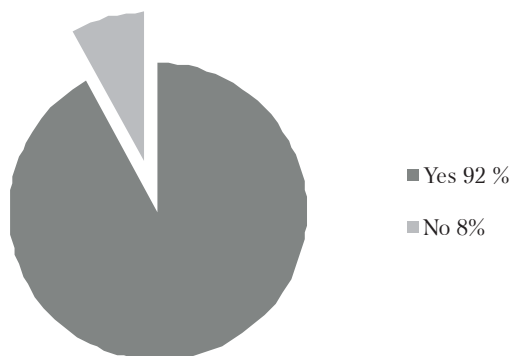
Have you ever thought about cross-border innovation activity?



Source: Authors.

Figure 5. Structure of the answers to the question: Have you ever thought about cross-border innovation activity?

Do you support creation of joint database on innovation potential resources?



Source: Authors.

Figure 6. Structure of the answers to the question: Do you support creation of a joint database on innovation potential resources (innovative firms, experts, suppliers, tools etc.)?

5. Conclusion. The project which is now in progress and should result in a regional innovation strategy has the aim to influence policy makers to support area of innovation and all innovation subjects, but specially to stress potential and importance of cross-border innovation activities. The analysis of the results shows lack of knowledge, activities, and innovation results. A solution made according to the received answers is a collaborative multiform network which would function as a distributed cross-border innovation centre. It confirms the hypothesis that cross-border innovation centre could be a platform of innovation activities between the EU mem-

bers and non-EU states. Such a centre would save innovation costs and help in generating new products, processes and services, thus creating a unique innovation platform which would help to harmonize the EU area by helping non-EU countries become the EU members. The described model would be a core of innovation activities of cross-border networks of SMEs, like cross-border clusters are. It should incorporate the following functions:

- a) Education centre: Centre for start ups and life-long education.
- b) Financial centre: Core for financial institutions which want to support innovations through different tools.
- c) Development and research centre: SW and tools for innovation activities.
- d) Products laboratory centre for testing, pilot projects support, standardization and certification.

These functions must be managed by highly educated knowledgeable experts who have theoretical knowledge, social skills, and also previously realized real projects, what means practical experience in the economy. The supposed model is the result of cross-border innovation strategy with interregional aspect between two cross-border regions of Serbia and Hungary which was created within the EU-funded IPA (Instrument of precession assistance) project. It is the result of a need, expressed in survey of random sample of about 100 SMEs, big companies and NGOs in cross-border regions: Vojvodina in Serbia and South Great Plain in Hungary. The survey performed gives the data about the knowledge of basic issues: invention, improvement, innovation, continuous and open innovation and proposals of suggested new cross-border innovation model.

Contribution of the research is a creation of a new model of distributed cross-border innovation centre which is not only multinational companies oriented. It encompasses all innovation activities of cross-border area in the field of products, processes and services and offers a new quality in cross-regional innovation approach. Such a model could be financed through instrument of pre-accession financial aid of the EU.

The paper contributes to the theoretical and practical issues of continuous innovation which would pull future members of the EU into innovation life cycle before entering the EU. Further research should analyse achievements of the suggested centre and diversify its functions.

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