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## PRECONDITIONS OF INTERCLUSTER COOPERATION INTERNATIONALIZATION

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*The article deals with the impact of internationalization on high-tech clusters functioning and determination of the impact on the international dimension of macro factors of intercluster cooperation. The features of cluster internationalization strategy of cluster based on technology transfer strategy. Proposed in this paper a methodology for clusters strategic planning based on in-depth understanding of the features of clusters as economic ecosystems.*

**Keywords:** *cluster, internationalization, high-tech, strategy, innovation ecosystem.*

**Introduction.** A cluster is a unique affiliate network because it brings together technology providers mechanical wood processing the entire production chain from the production preparation to manufacture billets of wood and prefabricated kits of wooden houses. Cooperation between enterprises participating in the cluster will create synergies for the benefit of the client and allow a more comprehensive proposal through joint supplies.

International clusters is a true “child” of globalization and increase the role of the regions, provide a basis for the inflow of foreign investment, learning a wide range of powerful entrepreneurs and small and medium enterprises, improve flexibility and mobility of companies, creating a wide range of network structures. Clusters and simultaneously act as a forum in which dialogue is conducted between business, government and academia on how to develop a competitive advantage within the city, province, state, country, and even at the supranational level.

Clusters (or rather cluster initiatives/organisations) can support user involvement in firms innovation processes:

- encouraging closer business-to-business cooperation and collaborative development;

- offering support services to firms to involve users directly in innovation processes;
- providing a neutral platform for firms to share development costs/risks;
- operate independently from single company interest.

**Analysis of recent researches and publications.** Contrary to Porter (and many others), the OECD approach is not very explicit on this issue even if it stresses the frequently localized, but “open” nature of clusters: In a knowledge-based economy, these clusters of innovative firms form around sources of knowledge. They are based on a sophisticated infrastructure in which knowledge is developed, shared and exchanged, and are characterized by highly concentrated and effective links between entrepreneurs, investors and researchers. Clusters can take a variety of forms, depending on their main technological and commercial areas of specialization. In most cases they operate within localized geographical areas and interact within larger innovation systems at the regional, national and international level. With globalization, dynamic clusters are becoming key factors in a country's capacity to attract the international investment that generates new technological expertise, to interest investors in innovation (venture capital, etc.) and to benefit from the international mobility of skilled personnel (OECD, 1999, p. 5).

Through a critical survey of the most visible pieces of this literature, the **aim of this paper** is to highlight the various dimensions and implications of the issues of cluster incorporation.

**Results and discussions.** Research methodology of this article requires gathering relevant data from the specified sources and compiling databases in order to analyze the material and arrive at a more complete understanding and reconstruction of the cluster incorporation.

Proposed in this paper a methodology for clusters strategic planning based on in-depth understanding of the features of clusters as economic ecosystems. Need to find out what place for a number of clusters in economic systems than their differences from other system entities in the economy, on which may be based interaction organizations - participants of clusters.

This paper is organized as follows. The first section discusses the current state of research on clusters and presents clusters as locations of innovation activity. The second section discusses the importance of cluster incorporation. The third section focuses on how the cluster ties promote innovation thought its evolution in global context. We conclude with an overall discussion, implications for theory and public policy and avenues for additional research.

Innovation clusters are characterized by a number of researchers as an association of various organizations (industrial companies, universities, technology parks and business incubators, research centers and laboratories, bank and non-bank credit institutions, investment and innovative companies, venture capital funds, business angels, government management, community organizations, etc.), allowing to take advantage of intra- hierarchy and the market mechanism, which allows faster and more efficiently distribute new knowledge and scientific discoveries.

Clusters in contrast to business networks integrate a much wider range of participants, including support institutions, industrial and commercial structures, including manufacturers, component suppliers, distributors, as well as regional and national governments. Both sectoral and geographical concentration of enterprises in the cluster is available. Within clusters emergence of network structures as well as social and business plan is practiced. This creates, above all, the effect of potentially competitive economies because there are pools of specialized suppliers of raw materials and components, as well as pools of companies with innovative technologies. In addition, in clusters arise business network of companies providing services in technical, administrative and financial areas.

Creative concept of environment has become a major concept in the development of the city Charles Landry. Creative City by Landry form:

- innovative high-tech enterprises;
- areas in which created cultural goods and services;
- a network for sharing information and knowledge (among enterprises, the public sector and individuals);
- clusters (including creative);
- links between business and institutions necessary for the creation and application of knowledge (between universities and business environment);
- living environment, infrastructure;
- variety of opportunities for recreation, entertainment and self-development;
- efficient transport infrastructure;
- social support mechanisms (promoting social participation, involvement of the in part).

According to Charles Landry, the city is an ecosystem in which culture is the catalyst of a common development. All aspects of the formation of an effective urban creative environment are both conditions of creation and functioning of the innovation system, and hence the torus factor of economic development. Creative Environment will just be that the institutional framework that will allow to develop

the innovation system. In the formation of the active medium creatinine significant role played by innovative high-tech enterprises.

A number of entrepreneurs said that sometimes it is difficult to update these relations - despite the fact that the decision to create a cluster there is, the cluster has been formed, and the system does not work. Then any competing businesses that are in the same cluster, do not find ways to interact, or same area of this interaction is very small, while others believe that all should be only one anchor company, and around it - providing a series needs an "anchor".

In general there are two vectors of cluster development: interaction within the cluster in the domestic market and work with the foreign market.

The task of the domestic is to maximize the effectiveness of this interaction by relations between enterprises, the anchor with the others or a joint venture with a number of partners across the cluster.

In the foreign market in the first place is to unite the efforts of all enterprises in order to position themselves in terms of representation in the market, growth in sales , promotion of enterprises in the region and it is not only regional.

The concept of the innovation system stresses that the flow of technology and information among people, enterprises and institutions is key to an innovative process. It contains the interaction between the actors who are needed in order to turn an idea into a process, product or service on the market.

One of the main ecosystem feature is its openness, i.e. the ability to perceive new type for it (it is connected with unoccupied ecological niches). The open ecosystems have processes of entropy decrease; it means that such systems have minimal entropy. On the analogy with biological approach the main peculiarity of the innovative ecosystem is its openness (economic analogue is internationalization) and getting of the necessary resources from outside; and the resource channel is the international transfer of the technologies in an extended sense – transfer of the evident and not evident knowledge with aim to obviate system fragmentation.

Global development cluster strategy is based on:

- 1) an external challenge: projection onto the world stage:
  - possessing the ability to develop a global strategic vision;
  - securing a position on the global market or generating new integrating markets on the global scale;
  - control one's own value chain;
- 2) an internal challenge: an inward projection to become an effective player:
  - the art of combining all three branches of the knowledge triangle;
  - the art of combining governance with the dynamic of cluster members;

- the art of combining attractiveness with competitiveness;

3) harness the European potential:

- reinforcing one another through European cooperation;

- developing a structure on the basis of world-class value chains;

- coming of age to become the actors of a new European industrial policy.

The emergence of new technology and innovation centers has been observed and often been attributed to the leverage of multinational corporations; to the fragmentation of industries; and to the mobilization of superb knowledge, people, and other resources around the world supported by a suitable economic policy.

Specificity of cluster-cluster cooperation is based on:

- recent approach, little experience;

- difficulty in finding a suitable partner because of great diversity of forms (size, maturity, governance, etc.), lack of contact person or organisation, etc.;

- seldom more than 2 clusters.

Globalisation of research and innovation and global competition are putting a new emphasis on the role of regional clusters and the need to further their development. Clusters increasingly see the need to link with other clusters at the international level, building on complementarities in order to strengthen their global lead positions, acquire access to targeted markets and know-how, exchange information and experience, establish networks in special technology or application fields and improve international visibility.

Nowadays Europe needs to better mobilize the innovative potential of its companies, especially its SMEs. At its core, the European Cluster Excellence Initiative provides the access to a European Cluster Collaboration Platform (ECCP) rich in information and services that enables better and more targeted interaction between cluster organizations and their members. The objective is to improve their performance and increase their competitiveness through stimulation of European and international cluster cooperation. To access the full range of information and services a registration is required. The use of the platform is free of charge.

**Conclusions and further researches directions.** The processes of globalization and increased international competition that characterize the global economy are an objective conditions change of paradigm of competitiveness, which is in move from the traditional industrial policy and transition to the new system of production based on the use of the advantages of specialization and cooperation. In this context and in view of the internationalization of traditional and high-tech sectors, as well as enhancing cross-industry technology transfer, acquire a special role of clusters. This paper analyzes the features of creating an international cluster for the implementation

of innovative projects in the field of instrumentation, combined with the characteristics of the industrial cluster. With this integration involves the sharing of functions and the construction of a distributed network of business process research and industrial cooperation.

In further research it is necessary to develop a mechanism for managing the innovation process and technology portfolio in the international cluster cooperation and basic approaches to forming mutually nationally (win-win) strategies to create an international cluster.

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**ПЕРЕДУМОВИ ІНТЕРНАЦІОНАЛІЗАЦІЇ  
МІЖКЛАСТЕРНОГО СПІВРОБІТНИЦТВА**

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*Стаття присвячена впливу інтернаціоналізації на функціонування високотехнологічних кластерів і визначенню впливу макрофакторів на міжкластерну взаємодію. Розглянуто особливості інтернаціоналізації розвитку кластерів на основі стратегії трансферу технології. Запропонований у роботі підхід до стратегічного планування міжкластерної взаємодії базується на основі розгляду кластерів як економічних екосистем.*

**Ключові слова:** кластер, інтернаціоналізація, високі технології, стратегія, інноваційна екосистема.

**ПРЕДПОСЫЛКИ ИНТЕРНАЦИОНАЛИЗАЦИИ  
МЕЖКЛАСТЕРНОГО СОТРУДНИЧЕСТВА**

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*Статья посвящена влиянию интернационализации на функционирование высокотехнологичных кластеров и определению влияния макро факторов на межкластерное взаимодействие. Рассмотрены особенности интернационализации развития кластеров на основе стратегии трансфера технологии. Предлагаемый в работе подход к стратегическому планированию межкластерного взаимодействия базируется на основе рассмотрения кластеров как экономических экосистем.*

**Ключевые слова:** кластер, интернационализация, высокие технологии, стратегия, инновационная экосистема.