

Collaborative Nature of Innovative Economy

Naturaleza colaborativa de la economía innovadora

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ABSTRACT:

The paper analyzes conceptual approaches to the study of innovative entrepreneurship in a collaborative system based on the stable links of network partners that carry out collective actions on the basis of a common strategy, common identity and joint commitments in the aspect of forming an innovative cluster in order to select priority areas for the development of science, technology and critical technologies, which should be aimed at modernizing the economy in order to improve its competitiveness; it is proved that the collaboration multiplies the productivity of existing factors of production manifold, and serves as the main mechanism for balancing economies in the conditions of global competition; formation of an innovative territorial cluster is justified as a set of agents that establish homogeneous, multilateral and regularly recurring links in order to share information and knowledge, exchange services and obtain economic benefits from the position of interaction between representatives of science / education, business and the state for the purpose of increasing innovative entrepreneurship; with the successful deployment of joint initiatives, innovative territorial clusters

Keywords: collaboration, innovative economy, innovative territorial cluster (ITC), collaborative management, synergetic effect, innovative cluster infrastructure, cluster approach institutionalization

RESUMEN:

El documento analiza los enfoques conceptuales para el estudio del emprendimiento innovador en un sistema de colaboración basado en los vínculos estables de los socios de la red que llevan a cabo acciones colectivas sobre la base de una estrategia común, identidad común y compromisos conjuntos en el aspecto de formar un grupo innovador en para seleccionar las áreas prioritarias para el desarrollo de la ciencia, la tecnología y las tecnologías críticas, que deberían apuntar a la modernización de la economía para mejorar su competitividad; se ha demostrado que la colaboración multiplica en gran medida la productividad de los factores de producción existentes y sirve como mecanismo principal para equilibrar las economías en las condiciones de la competencia mundial; la formación de un grupo territorial innovador se justifica como un conjunto de agentes que establecen vínculos homogéneos, multilaterales y periódicos recurrentes para compartir información y conocimientos, intercambiar servicios y obtener beneficios económicos de la posición de interacción entre representantes de ciencia / educación, negocios y el estado con el propósito de aumentar el emprendimiento innovador; Con el exitoso despliegue de iniciativas conjuntas, clusters territoriales innovadores.

Palabras clave: colaboración, economía innovadora, cluster territorial innovador (ITC), gestión colaborativa, efecto sinérgico, infraestructura de cluster innovadora, institucionalización de enfoque de

1. Introduction

In the modern economy of developed countries, incentives for the creation of innovative entrepreneurship are becoming sustainable, as business entities can network freely and develop collaborations ("work together", cooperation). This work is carried out by the markets at the territorial level in the regime of formation of innovative territorial clusters (ITC), expressed in the form of an interactive dialogue between science / education, business and authorities. Business entities of the ITC start cluster initiatives and grope for a vector of "smart specialization". The state also acquires a new functional role - to form and strengthen ties in the economic environment in a certain territory, encouraging the continuous formation of innovative systems and supporting the monitoring of the quality of innovative entrepreneurship in the ITC system.

Therefore, it is not accidental that in the works of well-known foreign economists, emphasis has been placed on a special innovative business process - a process of collaboration based on a sustainable partnership of interrelated economic entities with a view to continuously seeking new opportunities for the growth of innovative entrepreneurship, an orientation toward innovation as a result of the practical use of cluster innovations and spatial development of the economy. Thus, it turns out that with the development of cooperation between business institutions through the formation of stable vertical and horizontal links that determine the effectiveness of all its components, innovative processes within the same territorial zone are stimulated and a high level of their competitiveness and the country as a whole is provided. Given the uncertainty of economic development in less developed countries, even more fundamentally new, real-time systems and methods of "quick response" to something new are required, which will ensure the growth of innovative entrepreneurship.

In this connection, economic development in Russia is also directly related to the development of ITCs, which localize the interaction of such institutions as science and education, business, development institutions and federal and local authorities. The effect of cluster cooperation is the growth of innovative entrepreneurship through the increase of intellectual capital, the expansion of cooperative ties between business entities; completion of production value chains; development of import substituting competences and productions; increase of investment attractiveness and competitiveness of companies and regions of their basing. In this aspect, it is of interest to develop and justify new development models oriented towards solving the problems of regional strategic management. This development involves the solution of problems at once in several areas - the creation of new information, software and high-tech support, the creation of new decisive rules for the development and support of the decision-making process based on a new management methodology both in the external environment and in the internal territorial and industrial environment.

The purpose of this article is to show how, proceeding from the existing international experience of the collaboration in the aspect of ITC formation, it is possible to ensure the growth of an innovative economy in the conditions of global competition.

2. Theoretical analysis

2.1. Conceptual approach to the analysis of the collaborative nature of the formation of an innovative economy

Dynamic balance (stability of growth) with extremely high uncertainty may be ensured only on the basis of innovations created in the format of networks where legally independent participants develop the collaboration. Collaboration is a process of joint activity, for example in the intellectual sphere, of two or more people or organizations to achieve common goals, where knowledge, training and consensus are shared. As a rule, this process requires the

presence of a governing body, while the form of leadership can also be public, with the cooperation of equitable members of the decentralized community. It is believed that collaborators can get more opportunities to succeed in a competitive environment for limited resources. The more developed the system of collaboration, forming the network environment, the higher the innovation potential of the system and the better its competitive positions. With continuous technology change, the state can no longer optimally select priorities. In the modern economy, this format is an innovative territorial cluster (ITC). With the successful deployment of joint initiatives, ITCs develop the collaboration to the point where a unique network effect of innovative synergies (flow-based innovations) arises, which causes:

- 1) continuous productivity growth,
- 2) the continuous creation of a new product or technology (through the complementary combination of assets in different combinations),
- 3) dynamic stability in conditions of uncertainty (self-adaptation to external changes),
- 4) collaborative governance as a new way of consensus among economic entities,
- 5) the overcoming of technological "traps" (innovation lock-ins): every third player corrects the trajectories of the other two, directing them towards continuous updates.

2.2. Collaboration in the ITC system

M. Porter defines the cluster as "geographically concentrated groups of interrelated companies, specialized suppliers, service providers, firms in relevant industries, and organizations associated with their activities (e.g. universities, standardization agencies, trade associations) in certain areas, competing, but at the same time they are working together." (Porter, 2003). The characteristic features of clusters are:

1. The presence of strong competitive positions in international and / or all-Russian markets and the high export potential of cluster participants (supply potential beyond the region). As indicators of competitiveness can be considered: a high level of multifactorial productivity, a high level of exports of products and services (and / or a high level of supply outside the region).
2. The availability of such competitive advantages in the territory of the ITC base, which may include: favorable geographic location, access to raw materials, availability of specialized human resources, availability of suppliers of components and related services, availability of specialized educational institutions and research organizations, availability of necessary infrastructure and other factors. As indicators of the competitive advantages of the territory, one can consider, in particular, the accumulated volume of attracted direct investments.
3. Geographical concentration and proximity of the location of enterprises and organizations of the cluster, providing opportunities for active interaction. Indicators characterizing a high level of specialization of the given region can be considered as indicators of geographical concentration.
4. A wide range of participants, sufficient for the emergence of positive effects of cluster interaction. Indicators that characterize a high level of employment in enterprises and organizations that are members of a cluster can be considered indicators.
5. Effective interaction between the cluster participants, including, among other things, the use of subcontracting mechanisms, partnership of enterprises with educational and research organizations, the practice of coordinating activities for the collective promotion of goods and services in the domestic and foreign markets.

Originally implemented in practice, the cluster was explored from the standpoint of the development of specific areas, as a necessary Forsythe management technology in decision-making. This management approach did not include an innovative, or creative component. The adoption of an innovative cluster as a new tool for managing the economy required an in-depth study of cooperation between R & D, business and government. ITC assumes a

stable collaboration (partnership) of interrelated economic entities in order to obtain a synergistic effect as a result of effective interaction of the capabilities of partners, or rather their cooperation.

2.3. ITC: the essence and characteristics

In the modern economy, an innovative territorial cluster has come to be seen as a driver that determines the movement of modern social and economic development. The ITC is, it can be said, a continuum (a continuum from the Latin continuum - continuous) of various types of activities that ensure the growth of innovation in production (Nosova, Voronina, et al., 2017).

The major characteristic features of ITC can be seen in Table 1.

Table 1
ITC characteristic features

Innovative Territorial Clusters		Orientation to new radical innovations
		Creating new needs or contributing to development and better meeting existing needs.
		Creating basic innovations and innovations of modifications.
		Creating innovations for the purpose of their subsequent application in the national economy.
		Implementing innovations that replace previously created products and technologies, and create rationalizing and expanding innovations.
		Creating basic and complementary innovations.
		Realizing innovations-products and innovations-processes.
		Creating innovations for new markets and innovations, creating new applications in the old markets.
	-----	Orienting their activities to the various depths of the innovations being created.
		Orienting their activities on the introduction of innovations related to the rearrangement of individual elements of the existing production system.
		Creating adaptive innovations on individual complementary elements of the production system or aimed at partial improvement of the elements of this production system without a significant change in the functioning of the system as a whole.
		Developing new generations of technology and products without changing their basic design structures and structures.
		Initiating new types of production systems (products and technologies) with qualitative changes in the original concept, but retaining a functional principle.

In general, the implementation of the selected features of the ITC is aimed at the solution of the following tasks:

- Increasing the competitiveness of enterprises and organizations, the industry, improving the quality of life in the regions where they are based;
 - Development of innovative, industrial, transport, energy, engineering, housing and social infrastructure;
- Attraction of investments into the regions and skilled labor;
- ensuring effective support of enterprises and organizations, the industry from the consolidated budget of the Russian Federation and development institutions, non-budget sources;
 - Formation and development of effective mechanisms of private-state partnership in nuclear energy;
- Development of international cooperation and integration.

The main participants of ITC are:

- Enterprises (organizations) that specialize in specialized types of activity;
- Enterprises that supply products or provide services for specialized enterprises;
- Enterprises (organizations) that serve the public sector, including transport, energy, engineering, environmental and information and telecommunications infrastructure;
- Organization of market infrastructure (audit, consulting, credit, insurance and leasing services, logistics, trade, real estate transactions);
- Research and educational organizations;
 - non-commercial and public organizations, associations of entrepreneurs, chambers of commerce and industry;
- organization of innovation infrastructure: business incubators, technology parks, industrial parks, venture funds, technology transfer centers, design development centers, energy saving centers, subcontracting support centers (subcontracting); centers and agencies for the development of entrepreneurship and other organizations (Cheshire & Malecki, 2004).

The world practice shows that the collaboration as a tool of the ITC on the basis of the activities of scientific and educational institutions, business and government bodies contributes to the creation of high technologies and their wide application in the branches of the modern economy.

3. Results

3.1. Collaboration as a tool for the formation of an innovative economy (IE)

If joint initiatives are successfully deployed, innovative clusters develop the collaboration to a level where a unique network effect of innovative synergies (flow innovations) arises that ensures a continuous growth in productivity, a sustainable partnership of interrelated economic entities with the aim of obtaining a synergistic effect as a result of effective interaction of partners' opportunities through cooperation. All ITCs are built according to one principle scheme: on the basis of the interaction of different types of activities, it is necessary to provide "the introduction of a new product or service, the introduction of a new production process, the development of a new business model, the creation of new markets." The level of novelty of a product, technology, business model and market must be not lower than the national Russian market " (Enright, 1993).

Collaborationist innovations, as a source of growth of IE, contribute to:

- the dominance of horizontal network communications;
- creating a favorable ground for structural changes in the economy,
- increase the skills of the employed population,
- the search for new production and commercial ideas,
- creative analysis of internal and external information.

In this respect, the basis of modern IE is the direct participation of economic entities in innovation activities, which occurs in a system of interacting economic and non-economic structures (Nosova, Mackulyak, et al., 2017). The procedure for selecting priority areas for the development of science and critical technologies in Russia can be carried out through the collaboration of innovative companies, suppliers and organizations (development companies and manufacturing companies, suppliers of equipment, components, specialized services, infrastructure facilities: research institutes, universities, technoparks, business incubators and other organizations) that mutually complement each other and enhance the competitive advantages of individual companies and the cluster as a whole as a result of the synergistic effect, additional benefits from intra-cluster competition and cooperation arising due to the specifics of the interaction of the cluster core companies with other supporting organizations participating in the cluster through vertical and horizontal links (Firsov, 2012) .

Practice shows that IE:

- is closely connected with innovative forecasting and, accordingly, with the choice of breakthrough technologies;
- it synthesizes:
 - 1) long-term and strategic vision,
 - 2) scenario approach, making support for the interaction of the state with science and business;
- assumes active influence on the future and consists in search of alternative technological ways of its achievement;
- it identifies, evaluates and promotes the development of joint projects within and between industries in order to fill gaps in technology and capture opportunities that meet national and global needs;
- helps to reconcile the idea of the future development of many possible participants.

As a rule, it is a question of large-scale and long-term projects or the development of fundamental technological areas. In this case, a set of alternative projects and the consensus of the participants' opinions are considered for decision-making, despite the differences in their aspirations (Rosenfeld, 1997).

A distinctive feature of IE is the attempt to answer the question not only about what will or may be, but also what needs to be done to do this. In this aspect, the process of collaboration makes it possible to assess the availability and timeliness of access to necessary resources, the difficulties of entering the markets of future products, to identify real, promising ways and the necessary actions to enter these markets, and to increase their presence in the market. The specificity of IE is in the possibility of coordinating the cooperation of participants, clarifying the financial component and linking the interests of technology developers, industry and the social sector (Monastyrny, 2006). Despite the fact that elements of collaborative innovation entrepreneurship are making their way in our country, nevertheless, there is still no regular and unified mechanism for selecting, clarifying and implementing priority directions for the development of science and technology and technology. The list of priority areas and technologies currently in operation is poorly linked to state priorities and to the needs of innovative development of the Russian economic system, which entails inefficient use of budgetary funds. Unfortunately, there is no understanding in the power structures that the choice of scientific, technical and technological priorities should not be limited to the periodic compilation of a list of research topics for determining the directions of innovative financing (Kuleshov, 2013).

Today's situation of rapidly increasing complexity and alternative ways of penetrating

innovations into different spheres of activity, their interaction with other components of the development of society determines the need to develop a new approach to the formation of an IE model in the cluster collaboration system. The purpose of this structure is to help in developing the network nature of business interaction with the territories and sectors that embody the state priorities.

In this context, IE seems to be expedient to accumulate the functions of the national innovation system for the development of priority scientific and technical directions.

3.2. The impact of cluster collaboration on the growth of IE in Russia

The Russian economy as a whole has already joined the "race of the cluster collaboration". Specialists and company managers understand that without using the collaboration they will not be able to compete successfully either on the domestic or foreign markets. They highly appreciate the effectiveness of the already implemented collaborative solutions (Milner and Orlova, 2013). At the same time, companies approach these decisions very pragmatically, the main emphasis is on something without which it is already impossible to conduct business, without hurrying to invest in fundamentally new directions. Bottlenecks and problems in the implementation and use of cluster collaboration have been found. First of all, this is the lack of investment resources for the implementation of innovative projects (Kazancev, 2012). The problem with staffing of the "innovation revolution" was no less acute: there are not enough specialists and users who can correctly and efficiently use innovative technologies. The process stops and the fact that "advanced solutions" do not always resonate with suppliers and consumers who continue to work in the old fashioned way. In some places, insufficiently developed infrastructure (low bandwidth of communication channels, lack of access to mobile Internet, lack of data processing centers, etc.) is a constraining factor. Finally, a significant number of companies believe that they could receive a certain amount of state support to seriously stimulate them to make wider use of high technologies. In the Strategy of Innovative Development of the Russian Federation for the future, emphasis is placed on the formation of innovative territorial clusters (Strategy of innovation development until 2020, 2012). In order for ITC to develop, it is necessary to use both breakthrough (radical) innovations and supporting (improving) innovations. Their development is conditioned by the growth of the network nature of business, key competencies, innovative infrastructure. They contribute to the balance in the three types of activities - investment, innovation and financial.

In modern Russia, it is necessary to create a networked nature of economic processes aimed at innovative development. This leads to a more rapid transition to modern technological structures. The methods of forming cluster collaboration are different in their economic content, but the algorithm of the sequence of actions for its formation is practically homogeneous. This allows providing targeted, interrelated management of a set of institutions, norms and rules that promote growth.

The task of the innovative cluster in relation to the business environment, which consists in helping to overcome short planning horizons (to increase business interest in long-term planning) and "system myopia" (with the aim of stimulating the interaction of economic agents in the social and economic sphere) should be highlighted (Nosova, 2017).

In the growth of IE a large role is played by infrastructure facilities: technology parks, business incubators and other organizations that complement each other and enhance the competitive advantages of individual companies and the cluster as a whole as a result of the synergetic effect, additional benefits from intra-cluster competition and cooperation arising due to the specific interaction of firms (core) of the cluster with other auxiliary organizations participating in the cluster through vertical and horizontal links (Groshev and Shapkina, 2013). There is no doubt that the organizational mechanism of innovative entrepreneurship must be flexible enough to capture new technological opportunities and adapt them to the needs of society. The analysis should be preceded by an analysis of the systems of priority formation of critical technologies available in developed countries and the identification on

its basis of current trends in the methods of their selection and implementation.

The choice of priority directions for the development of IE should be carried out based on the following criteria:

- correlation with the goals and objectives of innovative development of the economic system;
- achievement of a relatively high level of R & D in comparison with the level of world technological leaders;
- ensuring technological safety;
- development of the domestic scientific base;
- access to the markets of high-tech products (services);
- readiness of the market to consume the results of the achievements of science, technology and technology;
- increasing the interest of Russian business in implementing the received technological solutions;
- quality of life growth.

In this context, it must be pointed out that the system of collaboration in the Russian economy contributes to:

- selection of priority directions for development of science, technology and critical technologies as an element in solving strategic tasks of improving the technological structure of production; - effective integration of the Russian scientific and technical potential into the planetary system of innovative relations; - ensuring the continuity of the transition from basic research to innovation;
 - development of an integrated, cross-cutting system and an institutional mechanism for state support of innovation activities. In terms of the growth of IE, the Russian state plays a decisive role (Chursin and Vasiliev, 2011). Our study identified the following areas in which the state could provide support in the growth of an innovative economy. Above all, it is encouraging competition. IE develops along such a wide range of directions simultaneously that it cannot be built at the expense of the efforts of a limited number of companies that are endowed with special powers and resources by the state. Therefore, a central role in this economy will be played by private business with a strong entrepreneurial principle. State authorities involved in the development of innovative economic development programs share this approach and see their main task in creating favorable conditions for private initiative. All actions by the state seem to be planned and taken carefully. However, practice reveals a stable technological and sectoral simplification of the production structure, as well as the problem of chronic "investment hunger". Finally, it is necessary to attract private investments to priority projects for the growth of the innovation economy in Russia, which means stimulating the process of economic entities collaboration.
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4. Conclusion

1. ITC is an algorithm or rules by which existing forces, form innovative entrepreneurship and change its "reality" of functioning in case of their change. This means that the cluster forces can unite and almost instantly transfer the system from one state to another, and also act as strategic tools - forecasting and the optimal choice of innovative entrepreneurship. The fall in the connectivity of the environment increases business risks and shrinks business horizons. This blocks the development of innovation and diversification, undermines the mechanism of the transmission of savings in long money.

2. The innovative economy needs to be developed in the collaborative mode of the new-generation industry (advanced manufacturing) and ultimately leads to a continuous growth of innovations capable of providing sustainable positions in any globalized markets (both old and future). It should be aimed at recording international scientific and technical and technological forecasts and trends, as well as on the correspondence of priority areas and critical technologies to the specifics of national development, competitive advantages,

innovative needs and their feasibility.

4. Regarding the formation of IE in Russia: a) it is necessary to launch innovative processes, increasing subsidies in R & D; we need a competitive and at the same time coherent network environment. And for sustainable growth, it is important to generate and distribute innovations continuously, using the flow method.

Therefore, updating the growth model and mastering the new way of life is an institutional problem. In other words, it is necessary to improve not so much the technologies themselves, but rather the environment where they are created and applied. Continually improving the quality of the environment in the regions where business networks are formed, today it is the postulate of the industrial policy of many countries.

7. ITCs are considered the most convenient ecosystem for on-line innovation. But of these, only those where synergy of innovativeness of self-development are becoming real innovative become. Then they can fulfill their mission - to become a pole of growth of innovative economy for this region, supporting the competitiveness of local economies, and through them - and national. Hence the golden rule of cluster policy: to stimulate not the participants of clusters themselves, but the process of their collaboration, that is, network character of the formation of the Russian innovation economy. These problems today seriously concern business and individual citizens, and, precisely, from the state they are waiting for active actions and decisions in this direction

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