

## MAIN FEATURE

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### **NETWORK MODEL OF THE SOCIAL AND ECONOMIC DEVELOPMENT OF THE REGION**

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### ABSTRACT

The article presents the network model of the interaction of the regions for the purpose to achieve their steady social and economic development and maintain the economic safety. The analysis of the level of the steady social and economic development and distribution of the basic threats to the economic safety of the region allows considering the intellectual-innovative complex as a knot of the regional network. Formation of the intellectual-innovative complex on the basis of the increase of the synergetic effect between its elements is possible thanks to the inter-regional inter-action of the institutional units (universities). Effects of the network model make applicable the clustering approach and allow to solve the questions of the interaction of the large business and science, mutually promoting the each other's competitiveness growth and that of the regional economy.

**Keywords:** social and economic development; network interaction; intellectual-innovative complex.

## СТАТЬЯ НОМЕРА

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### **СЕТЕВАЯ МОДЕЛЬ СОЦИАЛЬНО- ЭКОНОМИЧЕСКОГО РАЗВИТИЯ РЕГИОНА**

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### АННОТАЦИЯ

В статье представлена сетевая модель взаимодействия регионов с целью достижения их устойчивого социально-экономического развития и обеспечения экономической безопасности. Анализ уровня устойчивого социально-экономического развития и распределения основных угроз экономической безопасности территорий позволяет рассматривать, интеллектуально-инновационный комплекс как узел региональной сети. Формирование интеллектуально-инновационного комплекса на основе увеличения синергетического эффекта между его элементами возможно благодаря межрегиональному взаимодействию институциональных единиц (университетов). Эффекты сетизации делают применимым кластерный подход и позволяют решить вопросы взаимодействия крупного бизнеса и науки, взаимно способствующих росту конкурентоспособности друг друга и региональной экономики.

**Ключевые слова:** развитие регионов, сетевое взаимодействие, интеллектуально-инновационный комплекс.

Heterogeneity and instability of level of steady social and economic position and level of economic safety of regions makes considerable impact on functioning, structure, efficiency, and also the social and economic policy of territories.

As principal causes of regional differentiation in level of steady social and economic development and economic safety of regions act:

1. Various ability of adaptation of regions to the market with different structure VPR and different mentality of the population and the power.

2. Reduction of investments into the regional development.

3. An inequality of economic relations of subjects of the Russian Federation with the centre.

To increase the adaptation of regions to the market conditions the overcoming of the problems in strategically important spheres of the social and economic system of the region that will allow to raise the efficiency of the innovative activity, the inflow of the state and private investments, which will provide achievement of an optimum level of economic safety and, as consequence, will promote increase of steady social and economic development of regions are considered necessary.

One of the ways to maintain the economic safety and steady social and economic development of territories is the formation of the network model of the interaction of the regions.

The theory of the network is based on a set of independent managing subjects which by means of close interaction create long-term communications with consumers, suppliers, and partners. At the same time, being a part of one network, participants of the market compete for the more advantage-grounds providing access to resources and the information.

In the world practice, the network forms of the organization of the economic systems, based on modern communications and information technologies, allow to carry out generating and spread of knowledge, to use them in the most profitable segments of the market. Thus, if networks cover and involve the increasing quantity of territories, they in a greater measure consider the society and state expectations, are directed on a long-term investment of the means to develop the manufacture, infrastructure, social sphere that promotes the development of regions.

Formally, regional networks represent the knots and communications between them, defining some rules of their interaction and cooperation

in the considered territory. Economically it can be interpreted as follows: knots in a network are the enterprises, institutional units, and communications is an interaction between knots (financial, resource, social, scientific). Graphically network forms are displayed in the form of the "web" having in various places different degree of interaction. At high degree of interaction between the network knots the economic integration of a various kind – "rigid" (holdings, concerns, conglomerates), "soft" (regional and municipal economic complexes, associations, the unions, alliances) are formed.

Regional networks are characterized by the organizational-economic, industrial-cooperation, information, social, resource, institutional communications between the subjects. When forming the regional networks it is necessary to consider the branch specialization and geographical position, conditions and the factors defining the development of the structures of the network format of the interaction of regions. For this it is necessary to have the specific features of the territorial development:

- Favorable nature and climate conditions;
- Positive dynamics of development of the region;
- Presence of the own rich raw and material base;
- High level of development and efficiency of functioning of a transport and logistical infrastructure;
- Presence of zones of advancing development.

At the present stage of economic development of Russia they allocate the intellectual-innovative complex of regions as a zone of advancing development.

Development of the intellectual-innovative complex as the base of the network region is stipulated by the innovative process combination of the enterprises, scientific organizations, official bodies, research centers, consumer communities which are carrying out permanent process of creation, introduction and distribution of the innovations in the various spheres. On the basis of the system development of the innovative activity and integration interaction of the elements of the intellectual-innovative complex, the network region is capable to bring to its economy positive effect that will positively be reflected in the steady social and economic development of the territories.

The structure of the intellectual-innovative complex of the region and communication of its elements are presented in picture 1.

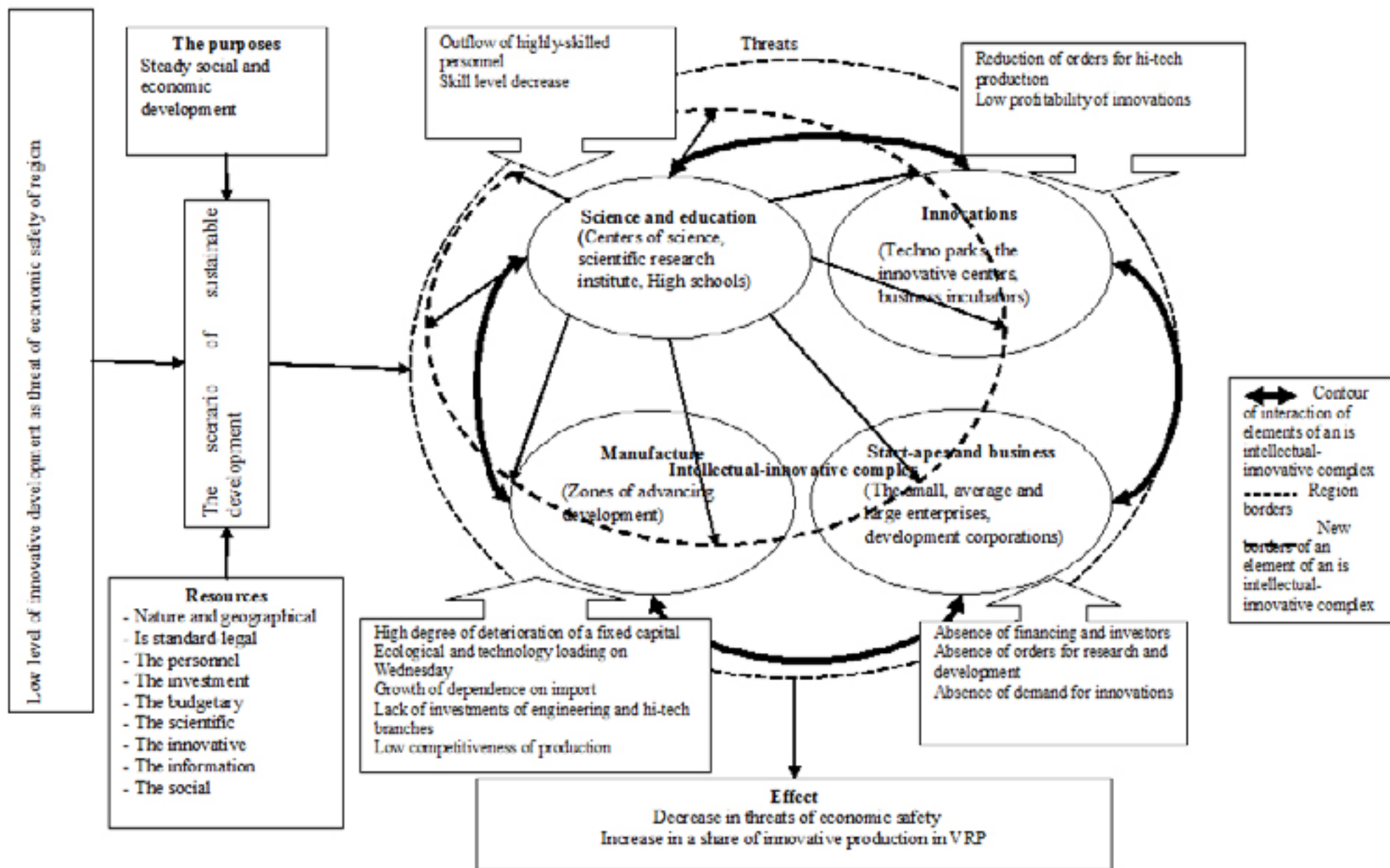


Fig. 1. The Structurally-Logic Scheme of Functioning of an Intellectual-Innovative Complex of the Region

The basis of the presented scheme is the overcoming of the threats to the economic safety of the region. In this connection there is a necessity to increase the efficiency of the innovative activity of the regions, assuming development of the science and technologies for the purpose of the social and economic progress. Now for the innovative development in the regions the Russian Federation's bodies of the regional power have organized the Centers of cluster development. Occurrence of the Centers grows out of the unsatisfied requirement of a society for the rates of development, and also in achievement of the new knowledge in the environment of the science and technology. The centre of the cluster development of each region sets standards of the high quality new results in sphere of science and technologies, economy, the state and society, and its activity is based on creation of the maps to develop and modernize the cluster's infrastructure, to assist to the development of the mechanisms of subcontracting, to carrying out of the progressive researches and development of the subjects of the cluster, to an exit of the subjects of the cluster on the foreign markets and realization of the collective marketing projects that is necessary for maintenance of the effective functioning of the basic elements of the innovative environment.

Center activity of the cluster's development is directed on the maintenance of the effective interaction of the basic elements of the intellectual-innovative complex.

The first element of the intellectual-innovative complex is "Science and education", including centers of science, higher educational institutions and scientific research institutes. Participants of this element carry out preparation of the highly skilled experts; work out the innovative ideas, programs, technologies, goods, services. Effective functioning of the first element is capable to provide vocational training of the staff.

Efficiency of activity of element "Science and education" is influenced by such threats as outflow of the highly-skilled personnel and decrease in a skill level of the available and future personnel resources (insufficient personnel maintenance for carrying out the scientific workings).

Participants of the second element "Innovation" (techno parks, innovative centers, business incubators) provide conditions for the support of the innovative process – from the search (working out) of the innovations up to the release of the samples of the commodity product and its realize. A subject of their activity is the complex decision

of problems of the accelerated transfer of results of the scientific researches in manufacture and their finishing to the consumer on the commercial basis. Activity of the element «Innovation» is influenced by the threats of reduction of orders for the hi-tech production, and also low profitability of the innovative products and technologies in the absence of the modern techniques and technologies or their high degree of deterioration.

The further promotion of the innovation products is carried out by the element "Start-up and business» which includes the small innovative enterprises, development corporations, the branch technical centers. Participants of this element get the profit at the expense of realize of the high technology production claimed in the market and rendering of hi-tech services. It is necessary to consider that fact, that they can, not only more flexibly respond to the arising inquiries of the consumers, but in the most cases quickly enter the market with the new production and unique services. They provide the steady interaction between the higher educational institutions, techno parks, business incubators and the real sector of economy during the process of realization of the commercialization results of the intellectual activity, and also reception of the high technology production. Students, graduates, scientific high school through participants of an element «Start-up and business» can receive practical skills of innovative business realization, promote the workings out and results of the intellectual work to the market, and also receive money resources. The main threats influencing element «Start-up and business», are the lack of investments on commercialization of the innovative products in engineering and hi-tech branches and low competitiveness of the innovative production, allowing receiving a positive effect to managing subjects from its application.

One more element of the intellectual-innovative complex is the "Manufacture" consisting of the zones of the advanced development requiring and capable to consume the innovative technologies and production. The zones of advanced development form in subjects of the Russian Federation perspective territorial and production cluster, uniform technological chains to manufacture the innovative production. With their help the too narrow sectoral regional development that raises efficiency of cluster developments is overcome. The basic threats influencing this element are the high degree of deterioration of the fixed capital, a lack of industrial potential of the enterprises, branches,

great volumes of imported production and technologies, there for the low export and the negative foreign trade turnover, and also high ecological and technology loading on the enterprises.

To accomplish the goal the natural-geographical, legal, personnel, investment, budget, research, innovation, information and social resources provided by Federal and regional authorities are necessary. Federal authorities, having pointed the state space-geographical boundaries of each territory, gave the subjects the outstanding natural mineral resources. In addition, Federal authorities have formed the legal basis for the activities of the centers of the cluster development, which main documents are:

1. The concept of the long-term social and economic development of the Russian Federation for the period till 2020 (confirmed by the order of the Government of the Russian Federation of November 17, 2008 № 1662-р).

2. Methodical recommendations on realization of the cluster policy in the subjects of the Russian Federation (signed by the deputy minister of economic development of the Russian Federation A.N. Klepach of December 26, 2008 № 20636-AK/D19).

3. Commission of the President of the Russian Federation on the results of session of Presidium of the State Council of the Russian Federation of November 11, 2011 (the report № Pr-3484 GS of November 22, 2011, point 2)

The group of documents of the state support of the cluster policy includes:

1. An order of formation of the list of the pilot programs of development of the innovative territorial cluster, approved by the decision of the Working group on development of the private-state partnership in innovative sphere at the Governmental commission on the high technologies and innovations (the report №6-AK of February 22, 2012).

2. Order of Minister of the economic development of the Russian Federation of March 23, 2012 № 223 «About the organization of carrying out the competitive selection of measures on realization in 2012 of the actions for the state support of small and middle business».

Within the limits of the specified federal regulatory legal acts the regional authorities develop and carry the own laws and lawful certificates on formation, development and realization of the cluster pass development of the regions.

Also federal and regional authorities form reserves for the regional centers for the personnel,

investment, budgetary, scientific, information and social resources. Only in the presence of the resources the process of development of the intellectual-innovative complex of the region is started.

Consolidation of efforts of the entrepreneurs, management bodies, subjects of the investment and innovative activity, measures of the state support in the certain territory will give considerable advantages in the competitive struggle, will promote the increase of the VPR, rationalization of the innovative processes, inflow of the private and state investments to the fixed capital, improvement of a standard of living of the population and reception of the positive foreign trade balance, necessary for the maintenance of the economic safety of the regions.

Clusters of mechanical engineering and metal working, information technologies, optoelectronics, aerospace, biopower, pharmaceutical, manufactures of auto components, etc., created in Moscow, St.-Petersburg, Zheleznogorsk, Voronezh region, Lipetsk region, Belgorod region and other regions can serve as the examples of the Centers of Cluster development in Russia.

It is necessary to notice, that a basic element of the intellectual-innovative complex of the region is "Science and education", providing development of the scientific and human potentials since knowledge and abilities of people are applied in all elements of the intellectual-innovative complex.

For the expansion of the element "Science and education" of the intellectual-innovative complex we offer to integrate universities (higher education) of frontier regions of Belgorod, Voronezh and Kursk regions into a uniform educational and scientific complex on the basis of the network interaction that will allow to provide high level of preparation of the experts and scientific researches. Such networks will give big stability to the system of generation and transfer of knowledge.

Functioning of the intellectual-innovative complex in the network region will allow "connecting" the areas with each other and with the centre due to the closer interuniversity interaction. Such approach to the achievement of the steady social and economic development of regions will provide creation of the general labor markets, technologies, knowledge and increase of the availability of the remote enterprises to use of the general resources, reduction of the general costs and formation of the synergetic effect of interactions.

The advantages of formation of the inter-regional network interaction of the universities are:

1. Realization of the new methodical and technological approaches to the organization of the educational process, allowing reaching high quality of formation by means of introduction of program and methodical maintenance.

2. Decrease in expenses for research and developmental works, increase of their efficiency and elimination of duplication of the innovative production.

3. Creation of the design commands of teachers for the decision of the scientific, innovative and methodical problems on the integrative basis.

4. Expansion of the spheres of the own activity of the universities at the expense of the network interaction.

5. Creation of the modern educational environment, providing to students the possibility of the independent forming of a trajectory of the future professional work, creative interaction, im-

provement of conditions of self-development and self-realization of students including students in the dialogue of cultures, keeping health of students and employees, the faculty, on the basis of incorporated universities.

Realization of the offered conceptual scheme of the network interaction of the intellectual-innovative complexes of the regions stimulates strengthening of the economic policy by means of the definition and strengthening of the competitive advantages, forms the integrated development of the network educational sphere, promotes increase of the efficiency of the accepted administrative decisions of the economic problems, gives the co-ordination and control possibility to the structures of the network format, providing positive economic shifts in the sphere of the intellectual-innovative structure of the network format taking into account specific branch and regional features.

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