

# Genesis of the modern theory of innovative production placement in the economic space

## Génesis de la teoría moderna de la colocación de producción innovadora en el espacio económico

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#### ABSTRACT:

Paper deals with the spatial aspect of the innovative policy, problem of production placement in the economic space is considered. The purpose of this research is to offer a systematization of theoretical approaches to production placement in the economic space. The classification of attribute characteristics of economic space is introduced, the paper offers approach to the interpretation of the economic space within the innovation paradigm.

**Keywords:** innovative policy, economic space, production placement, localization of industry.

#### RESUMEN:

El artículo aborda el aspecto espacial de la política innovadora, se considera el problema de la ubicación de la producción en el espacio económico. El objetivo de esta investigación es ofrecer una sistematización de los enfoques teóricos de la ubicación de la producción en el espacio económico. Se introduce la clasificación de las características de los atributos del espacio económico, el documento ofrece un enfoque para la interpretación del espacio económico dentro del paradigma de la innovación.

**Palabras clave:** política innovadora, espacio económico, ubicación de la producción, localización de la industria.

## 1. Introduction

Rational organization of development and implementation of the country's spatial development strategy is an integral function of any state, the state and municipal authorities participate in this management function in a coordinated manner. The location of innovative production includes three hierarchical levels of the country's territory: federal, regional and municipal. At the same time, modern processes of development of high-tech industry and virtual-production environments result to the "erosion" of administrative boundaries. These

trends are reinforced by the transformation of relations between global competition and economic cooperation. At the same time, interconnected innovative enterprises and institutions of economic development can be located within the boundaries of neighboring administrative-territorial units.

High rates of scientific and technological progress and Informatization of society cause the growth of the number of network links between economic entities. Cooperation of companies located at a great distance from each other results to the phenomenon of "compression of economic space" (Treyvish, 2010). The compression of the economic space is manifested in the form of the development of new information and communication technologies and increasing the availability of high-speed transport. This process is also characterized by polarization and clustering of the socio-economic system with a parallel reduction in the area of actively developing economic space (Mikhailova, 2017).

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## **2. Methodology**

The theoretical basis of the research are the concepts and hypotheses in the field of cluster theory, theory of spatial development, theory of innovation and innovative development, theory of institutions and institutional transformations. The study is based on the dialectical method of scientific cognition, which involves the consideration of economic relations within innovative clusters in their relationship and development. In the course of the study, a systematic approach is widely used, which involves a comprehensive study and structural and logical ordering of economic systems. In the framework of the study, the methods of structural and comparative analysis are also in demand, the solution of scientific problems of the study required the use of general theoretical research methods such as abstraction and concretization, analysis and synthesis, induction and deduction, comparison and contrast.

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## **3. Results**

The following theoretical grounds for the formation of a modern innovation paradigm of economic development are identified:

the concept of postindustrial society (Bell, 1973): the development of the world economy at the present stage will have an informational character;

theory of entrepreneurship, uncertainty and profit (Knight, 2003): the emergence of knowledge as new key factor of production;

theory of production and distribution of knowledge (Machlup, 1966): the formation of the new postindustrial society;

the concept of the information society (Masuda, 1998): information revolution as a factor of creation of hi-tech productions in the fifth technological way;

concept of human capital (Shultz, 1971): increasing the role of knowledge and information for economic development;

the theory of investment in human capital (Becker, 1962): prospects of investment in professional competence, continuing education, information exchange systems.

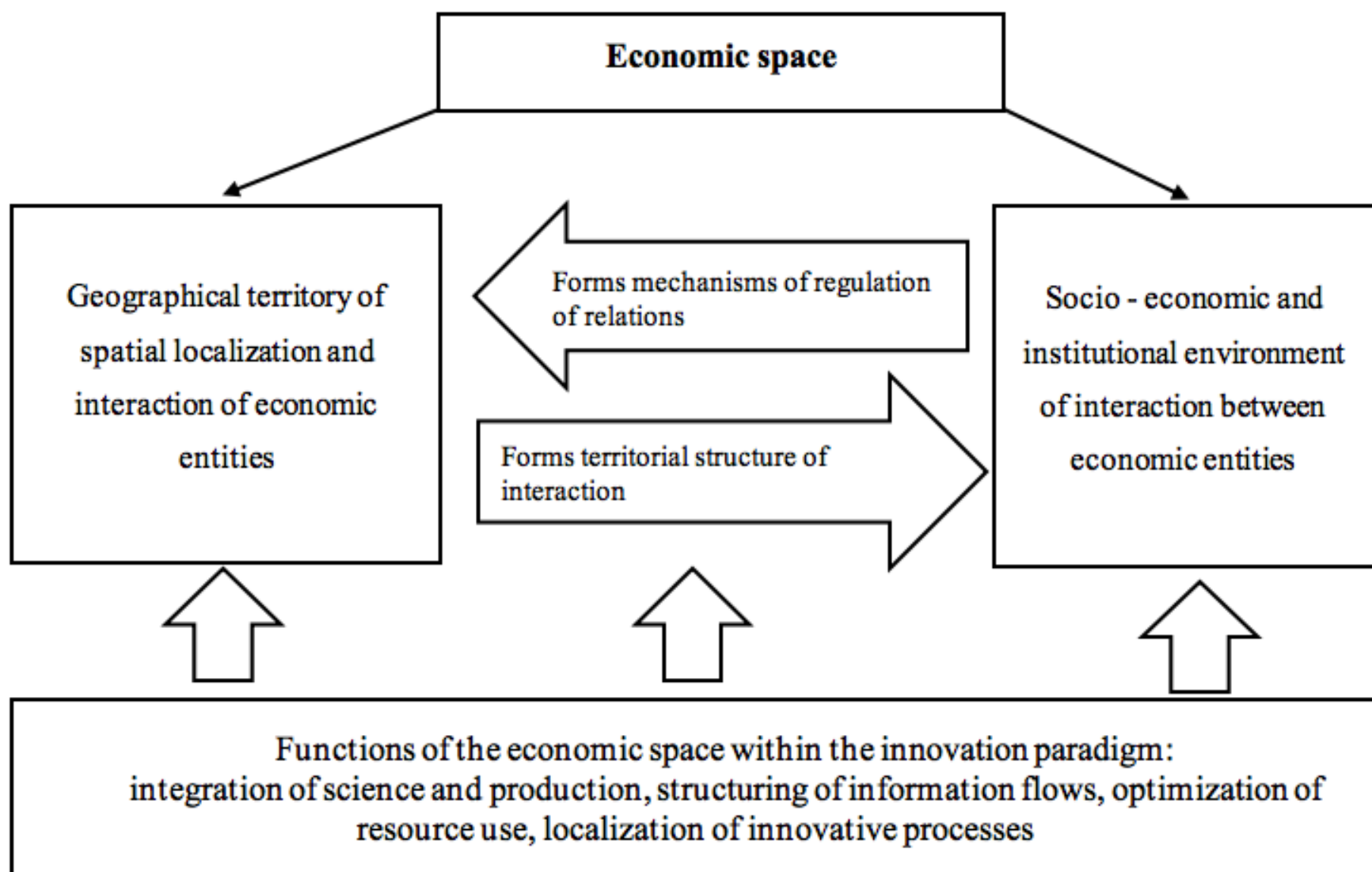
The selected concepts of socio-economic development are the theoretical basis for the formation of a number of interrelated areas of economic thought, in particular: "knowledge economy", "new economy", "innovative economy", "information economy". The research focus of these theoretical concepts is focused on information and technological aspects of the transformation of world economic system (Denison, 1962). The theoretical analysis of these theoretical concepts allows us to talk about their cognitive complementarity in the study of placement of innovative production in the economic space.

Within the framework of the innovation paradigm of territorial development, the economic space acquires new properties, and, accordingly, its character as an object of scientific research becomes more complicated. The innovation paradigm is characterized by the consideration of the territory as a spatial environment for the implementation of innovative processes and the development of human capital on the basis of a single infrastructure and resource basis. At the same time, intangible resources such as information, communication

networks, development institutions are also considered as factors of competitiveness of the territory. This approach is shown schematically in figure 1.

**Figure 1**

Graphical interpretation of the approach to the interpretation of the economic space within the innovation paradigm (developed by the author)



The innovative environment of the territory in modern conditions becomes a key factor of investment in high-tech production and development of human capital, changing the traditional approach to spatial allocation of productive forces. Within the framework of the considered evolution, three chronological stages of development of scientific ideas about the integration of innovative production are identified. The first stage of the formation of the modern theory of spatial localization and clustering of innovative production (the last quarter of the XIX century – the beginning of the XX century) is characterized by the design of the theoretical core of scientific ideas about the spatial integration of the economy. The first stage is characterized by the formation of the theory of «shtandort» (Launhard, 1882) and the concept of "industrial districts" (Marshall, 1979). At this stage, the existence of the relationship between the spatial agglomeration of enterprises and their economic efficiency is substantiated.

The second chronological stage (the beginning of the XX century - the last quarter of the XX century) is characterized by the development of theories of territorial location of production and zoning of the economic space of the country. The second stage is characterized by the formation of the concept of " industrial districts" (J. Becattini, 1992) and the prerequisites to the development of cross-sectoral clusters in the context of transition to innovative economy.

The third (modern) chronological stage (the last quarter of the XX century – present) characterizes the current state of the theory of spatial localization and clustering of innovative production. This stage began with the development of the concept of cluster, which uses the current position of theoretical concepts in the field of regional economics, economic geography and institutional theory. Initially, during the 1990s, the main object of scientific research within the cluster concept was the formation of traditional industrial (industrial) clusters. Currently, theoretical approaches to the development of various types of clusters have been developed: innovative, industrial, tourist, social, etc.

## 4. Discussion

Various theoretical approaches to the definition of the concept of economic space are considered in the study. The following definition of economic space proposed by A.K. Granberg is widespread in the scientific literature: economic space is a territory rich in a large number of social and economic objects and connections, that includes settlements, organizations and enterprises, objects of transport and engineering infrastructure, etc. (Granberg, 2008).

P. Krugman suggests considering the economic space as any "economic landscape" under the influence of market conditions and dynamic distribution of production resources (Krugman and Obstfeld, 1988). O.A. Biyakov on the basis of generalization of various aspects distinguishes three main approaches to defining the essence of economic space: resource, territorial and information (Biyakov, 2004). E.G. Kochetov, on the contrary, distinguishes the following three aspects of the economic space: geostrategic, geopolitical and geoeconomic, thus, the research focus is transferred to the problems of development of the world economic space (Kochetov, 2006).

E.A. Orekhova considers institutional aspects of spatial development: the economic space is formed and develops under the influence of a set of regular economic relations fixed by the relevant formal and informal institutions (Orekhova, 2008). V.V. Chekmarev considers economic space as an interconnected set of physical and intangible objects that are the subject of economic interests and economic relations (Chekmarev, 2006).

**Table 1**  
Classification of attribute characteristics of economic space

Characteristics of economic space as a geographical territory	Characteristics of economic space as an economic system	Characteristics of economic space as a territorial structure of production
Geographical and coordinate reference of economic space.	Reproduction (including expanded) of economic benefits and factors of production	Heterogeneity of location of production facilities and infrastructure in space (center-periphery)
Single area of economic space	Interaction with other higher-order and lower-order economic systems	Polarization of economic development processes in the form of «points of growth»
The integrity of economic space	The cyclical nature of economic development	Variety of forms of spatial organization of production
Complex configuration of borders of the economic space	Self-organization and realization of synergetic effects	Closure of on-site internal threads of the resources allocation
Density of placement of objects within the economic space	The evolutionary nature of the processes of self-development	Connectivity areas on the basis of the network structure of the horizontal connections

Source: developed by the author

Analysis of the scientific literature has led to the conclusion that the category of "economic space" is debatable and there are various points of view regarding its interpretation. This conclusion is largely due to the complex nature of the economic essence of space. Economic space, in addition to a certain geographical area, is an interconnected set of economic actors, an institutional environment for development, a self-organizing and evolving system. The author's classification of attribute characteristics of economic space is presented in table

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## 5. Conclusion

The economic space is formed on the basis of the unity of the socio-economic environment of interaction of economic entities, the territory of their spatial localization and mechanisms of regulation of economic relations. This approach allowed to reveal attribute characteristics of economic space and to actualize a role of innovative processes as an independent factor of production placement.

The evolution of theoretical approaches to production placement in the economic space is due to the current trends of spatial distribution of industry. The author highlights the following trends for the evolution of theoretical approaches to spatial development of economic systems: increasing the number of efficiency factors of integration processes; the complexity of the relationships between economic entities; increasing the role of innovation in economic growth; strengthening the impact of institutional, information and environmental characteristics of the territory on its global competitiveness.

It is revealed that at the present stage the research focus within the innovation paradigm focuses on the problems of spatial integration of innovative systems. The main categorical unit of territorial innovation systems research is innovation clusters. Clusters integrate the processes of creation, commercialization and transfer of innovative technologies.

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