

CIEDR 2018
The International Scientific and Practical Conference
"Contemporary Issues of Economic Development of Russia:
Challenges and Opportunities"

ABOUT THE SYSTEM APPROACH TO THE PROBLEMS OF
NETWORKING

O. A. Fikhtner (a)*

*Corresponding author

(a) Yaroslav-the-Wise Novgorod State University, ul. B. St. Peterburgskaya, 41, Veliky Novgorod, Russia,
Oxana.Fikhtner@novsu.ru, tel. +7-911-605-42-89,
Doctor of Economics, Head of Department of Economic Theory

Abstract

Domestic and foreign experience of economic and social reforms leads to the conclusion that when the economic paradigm changes, the essence of state management decisions necessary to form and maintain a stable course of economic growth and social development comes down to managing social and economic processes, including in the new Russian economy refers the process of networking. Moreover, network processes are spreading not only in the economic sphere. The consequence of this is a change in the systemic paradigm and the use of integrative and interdisciplinary approaches to understanding new economic processes. Theoretical research in the field of network processes will allow various subjects of the Russian economy to form their own growth and development strategies, ensuring competitive advantages for themselves and setting the innovation vector for the growth of the Russian economy. The practical significance of research on network interaction and its system-forming bases for individual economic actors consists in forming a list of sources of growth of their own economic efficiency due to the interaction and those advantages that will help make them more flexible and easily adaptable to dynamically changing environmental conditions. To implement a network growth strategy, economic actors need an adequate network infrastructure, the availability of highly qualified personnel who are ready to introduce the principles of a network economy into business practice, and an appropriate institutional environment. The state promotes the creation of favorable conditions for the successful process of networking of the socio-economic space.

© 2019 Published by Future Academy www.FutureAcademy.org.UK

Keywords: Competitive efficiency centers, network entrepreneurial structures, network resource, networking, system paradigm, the process of networking of the socio-economic space.



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

The current situation in the development of the global economy is characterized by systemic uncertainty, a high degree of volatility, however, global trends (concentration of capital, diversification of production, total informatization, digital transformation) have become a source of organizational and managerial innovations – economic agents more flexibly and dynamically adapt to changing conditions, forming network forms of interaction. An important condition for innovation development is the formation of a special network environment in which an adequate institutional field is created for more effective interaction: an increased level of trust can reduce transaction costs, closer relationships reduce the time for making management decisions, “compressing distances” through the intensive use of information technologies production and marketing opportunities. Being at the same time both competitors and partners, business entities stimulate both intra-industry and inter-industry competition, which is especially important in today's Russian conditions.

For the business sector, networking is often the only possible survival strategy, and since the development of a society, its advanced development opportunities are determined by the economy, it is very important to study the socio-economic development of the country as a whole from a new point of view – through the prism of creating and transforming networking of economic actors. Since the state exercises a managerial impact on the business sector and largely predetermines its future development, the management of network processes depends largely on the capabilities of an integrated, systematic approach to forecasting, organizing, monitoring and adjusting (if necessary) network interaction both at the goal setting stage and when analyzing its results. The state forms the external environment that predetermines the work of economic actors: by entering into network interaction with other actors, business structures provide themselves with a serious “safety margin” by solving their tasks and simultaneously the tasks of partners. The effectiveness, managerial impact of the emergence, availability and ability to overcome network interaction problems, which has its own specificity for different enterprises, industries, territories and macroregions, and predetermining development prospects for each subject, setting the innovative potential of its growth, stimulating the multiplier effect of economic growth in general.

2. Problem Statement

The relevance of network processes, characteristic of modern economic actors and forming the network business space of the modern global economy, makes it very popular from the scientific-theoretical and practical points of view of research in this area of knowledge. In connection with this circumstance, conceptual and practice-oriented developments in the field of network interaction, focusing on the system component in questions and ways of solving problems of networking, correspond to promising directions of development of economic thought, laying the fundamentals and analytical and instrumental base of innovative development of the Russian Federation (Fikhtner, 2014). It is the system-oriented provision of networking that is intended to prevent the occurrence or resolution of problems characteristic of a large group of economic actors entering into network processes and defining a new vector of development of the Russian business space.

The objectives of the study include the establishment of the semantic content of the concept of “networking” in the system of economic management, the allocation of its system-forming context for management functions; justification of the development of competitive forms of network structures, identifying the sources of efficiency of subjects entering into network interaction, as well as the ability of network interaction to stimulate innovative development of the national economy.

3. Research Questions

- 3.1. What is the essence of the definition of “networking” and its feature in terms of a systems approach?**
- 3.2. What are the conceptual foundations of networking and its role in the formation of an innovative model of economic development?**
- 3.3. What are the systemic problems of networking business structures and possible solutions?**
- 3.4. Can networking be the basis for the innovative development of individual industries and regions of the Russian Federation?**

4. Purpose of the Study

The purpose of the study is to conceptualize the basics of the theory of networking and clarify the provisions of the new system-oriented concept of the development of the national economy, based on the methodology of network interaction of economic actors.

5. Research Methods

5.1. Abductive approach

The use of the abductive approach for this study allows us to put forward new provisions and develop the already existing theoretical foundations of the emerging concept of the national economy development, which seems to be very successful, since it contributes to the substantiation of management decisions in creating competitive conditions for the functioning of economic actors in the Russian business environment.

For the analysis of systems, the very abductive reasoning necessary for establishing regular connections between the observed properties and the relations of phenomena becomes a very important approach. In accordance with the approach of Dubois and Gadde (2002), it is proposed to use systemic combination as a mechanism to achieve the stated research goal (Figure 01).

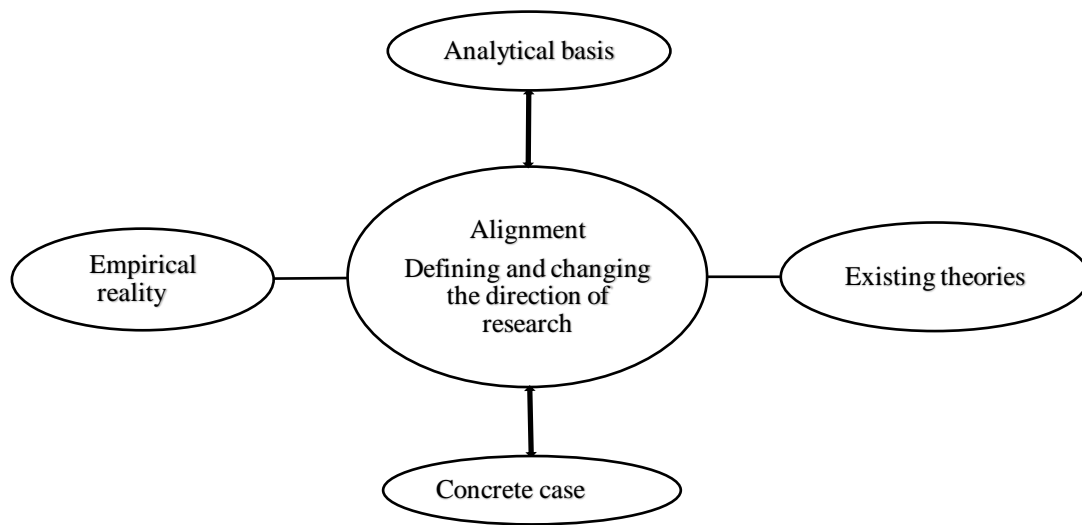


Figure 01. System Combination Scheme

The components of the presented systemic combination are considered from the point of view of bringing theory and reality into conformity, as well as determining the direction of research and its further change. Of course, the use of rigid theoretical dogmas is limited in the conditions of a permanent model of competition without taking into account changing conditions, however, the inability to assess the direction of future changes in the sphere of behavior of economic actors to correct their negative consequences entails much worse consequences than the absence of theory.

5.2. Network analysis

At present, the concept of “network structure” has become very popular among researchers in various branches of science in relation to a large list of diverse objects in sociology and geography, politics and culture, medicine and education. The common principles of construction, but an analysis toolkit that is unique for each science, made it possible to define network analysis as a universal way of solving empirical problems with the possibility of theoretical generalizations corresponding to each science. Mutual enrichment has taken place: on the basis of mathematical concepts, specific “network” methods have been developed aimed at solving socio-economic problems.

Network analysis allows us to simulate different interactions between actors at different levels of research – from micro to mega level, ensuring continuity of data. In addition, the network method helps to actively use quantitative assessments to describe socio-economic processes, which essentially increases the objectivity and significance of the conclusions made on the basis of empirical research methods.

5.3. System approach

We note that a systematic approach to the management of network processes, as well as to the management of other objects, includes a mandatory study and creates prerequisites for the practical implementation of its component parts:

- system-elemental (system-complex) aspect;

- system-structural aspect;
- system-functional aspect;
- system-objective aspect;
- system-resourceful aspect;
- system-integrative aspect;
- system-communicative aspect;
- system-historical aspect.

Any system should have well-defined elements of its structure, having external and internal connections, allowing to judge about the structure, internal construction of the system under study. Both the system as a whole and its constituent elements fulfill certain goals and functions for which they are created. For the functioning of the system, it is necessary to clearly define the resources that allow to effectively solve the tasks set before the system. At the same time, the components of the system determine its integrity and peculiarity, integrating certain properties of the system into a single center. The implementation of effective communications with the outside world allows the system not only to satisfy the demands of external actors, but also to improve itself, to add additional functionality to solve new problems.

Almost all modern sciences are formed according to the system principle, therefore the theory of network interaction is also based on the system principles of interaction of actors in an environment with a high degree of volatility and system uncertainty

6. Findings

The subjects of the modern economy realize their mission in a constantly changing world, and the changes are occurring at an incredible speed. The production technology means and mechanisms of information transfer, value orientations of products (goods, services, works) consumers etc. are changing, new areas of activity, state priorities, new fields of knowledge and profession are emerging (Maslennikov, 2017). This also leads to the formation of other principles of behavior of modern economic actors in the new economic environment:

1) the global nature of the activity: any subject of the economy (firm, individual, educational institution or government body) with the help of the latest information and communication technologies can interact with partners (resource providers, financial, insurance intermediaries, employees, end users of their products) of the globe. The lack of borders – territorial, national, sectoral – means greater freedom of action, which can contribute to the growth of the subject's internal efficiency;

2) transition from vertical to horizontal network management structure: makes the organizational structure more flexible, responsive to dynamically changing environmental conditions, which allows it to quickly adapt to new technologies, new products, new marketing strategies, etc.;

3) erosion of functional boundaries within the organizational structure: the activities of various departments within the organization closely intersect due to the integration of business processes to achieve better results;

4) networking: participation in network associations or projects brings additional benefits to economic entities, makes it possible to use common resources (for example, information, business connections and reputation) of network partners, reduce transaction and other costs of business;

5) strengthening the role of social factors in the economic strategy of any market participant. As a result, economic actors are willing to sacrifice efficiency for a more equitable distribution of resources;

6) acceleration of information transfer processes: social networks as a powerful information resource are often used by economic actors to promote their product, ideas, services. At the same time, the importance of the digital footprint is greatly enhanced, since the risk of spreading negative information is also quite high, so the quality of the product, like the reputation of the form, must constantly increase (at least not decrease).

As a result, we note that new economic conditions, including the network economy, create an active business environment for the functioning of modern economic actors, where interaction becomes the main motive of behavior.

Networking is a fairly stable structure based on the balance of interests of its participants, the system of internal norms and rules, a unified network culture, the synergistic effect of the growth of the effectiveness of the actors in the network. The future of the participant joining the network – its competitive position in the market, customer loyalty to its product, the effectiveness of the network as a whole depends on how effective the network interaction will be organized. Building a system of effective interaction can be promoted by a number of factors, including: the level of development of the principles of the new economy in a country, the established institutional environment of interaction, the degree of openness of the economy and its readiness for network transformations.

Analysis of foreign and domestic literature shows that there are many terms denoting various types of network interaction between companies. They differ in a variety, they can designate both different and similar types of networks, intersect, go beyond the definitions of a network adopted within the framework of a particular concept:

- Virtual Organization, 1986;
- Dynamic Networks, 1986;
- Value-Adding Partnerships, 1988;
- Value-Chain Partnerships, 1992;
- Strategic Networks, 1992;
- Strategic Alliances, 1994;
- Strategic Groups, 1994;
- Virtual Web, 1999;
- Value Web, 2001,
- State-Private Partnership, 2000.

However, the presented list of terms is not complete: the networking of economic actors in the interpretation of different authors may have other formulations, which indicates the vagueness (uncertainty) of terminology in this direction, both in domestic and in foreign literature.

To substantiate the emergence of network interaction and the functioning of network structures, as well as determining their place in the new economy, we propose to use the methodological approach applied by Kleiner (2011, 2017a, 2017b) in the concept of a system resource, the essence of which is to consider the economy as a set of existing or potential economic systems.

The emergence and functioning of networks can be explained in terms of the characteristics of limited / unbounded systems in space and time, on the basis of which four types of network resources can be distinguished.

1) The object network resource is realized on the principle of concretization of the form of economic interaction and exists without reference to the specific parameters of the subject. An example of a network association formed on the basis of an object network resource is the franchise interaction associated with the use of a single successful business technology by various economic entities. Franchising has become widespread not only in the traditional areas of activity – trade and manufacturing, but also in the service sector: these are educational, medical, informational consulting and intermediary, advertising, printing and other services. Strategic alliances can also serve as an example of the implementation of an object network resource precisely because they are soft forms of organizations, which are an agreement on the cooperation of two or more independent firms to achieve certain commercial goals, to obtain a synergistic effect of interaction (Wagner & Zidorn, 2017).

2) The process network resource is formed in the process of cyclically repetitive actions of economic actors, the spread of the principles of this interaction on the available space. Examples of networks based on process resources are value chains, distribution networks, network retail.

3) The project network resource is based on the hypothesis of single or consecutive measures aimed at achieving a specific goal in a given place during a given period. Examples of project networks are infrastructure entities (technoparks, business incubators, etc.) created to stimulate and support small businesses (it is their representatives who first of all become active participants in network interaction). The term of their functioning in a particular territory may be unlimited, since small business always needs support, and the termination of their activities is possible only with the exhaustibility of the necessary resources.

4) Environmental network resource. The economic, social, legal and even geographic environment fills the accessible space, which has no inherent boundaries and, consequently, forms. Networks formed as a result of favorable institutional prerequisites are formed in those territorial subjects, industries where an adequate network infrastructure has already been established, facilitating the processes of formation and motivating economic actors to effective network interaction. Examples of environmental networks include the Internet, the newly formed clusters within megacities (Michael, 2003).

All types of networks are equally important for the study of networking processes in the Russian economy, since the mechanisms and tools for managing network processes can and will differ depending on the prevailing type of network resource. Each network interaction in the business environment has features common to all four types of network resource, although one of them, as a rule, usually dominates. Thus, the network resource of the business economy as a whole as a set of networked entrepreneurial associations functioning in it is naturally divided into four types corresponding to the four

types of networks, which is an essential condition for the formation of government policy measures in this area.

Since networking is a very broad concept and often takes very different forms that do not have many similar properties (Grandori & Soda, 1995), then evaluate it (for different purposes – assessing the benefits, overall efficiency, taxation goals, implementation of government support measures and so forth) is quite problematic. In the Russian statistical data recording system there is generally no indicator of an economic actor (whether it is an entrepreneur without a legal entity, a small business or a large company, an educational institution or a non-profit organization) to any association that does not have overall tax reporting. Therefore, the presence, forms, and scale of network associations can only be revealed in the following ways: 1) to be a member of these associations and receive information from direct network partners, or 2) to conduct specialized surveys, questioning potential network participants, which can be absolutely all business structures.

In addition, the systemic problems of interaction include:

- low level of institutional trust,
- poor infrastructure of interaction,
- a low level of mental readiness for change and, as a result, initiatives by economic actors;
- monopolism and weak competition in certain industries.
- low level of solvency of the population, which is not conducive to economic motivation to be active (organizing their own business, increasing demand for products, legalizing an already functioning business in the form of network associations, etc.).

In the conditions of economic uncertainty, when the external interaction framework is blurred, the role of diverse links between the subjects of relations increases dramatically. The general economic, political and social environment of interaction of participants meant the presence and the desire to solve those problems that were familiar to everyone, and each had in his or her stock certain recipes for solving them. Therefore, some researchers, for example Asaul, Skumatov, & Lokteyeva (2004), associate the formation of networks with the need to solve the problems of the current and future development of business structures that are most effectively solved jointly by network partners. Network participants, as a rule, have a common goal, a high degree of interconnection of network elements, a unified information environment, which significantly increases the effectiveness of its operation.

At the present stage of development of the national economy, tendencies towards overcoming systemic problems have emerged due to the purposeful policy of the Government of the Russian Federation, global factors of stability of the world economy, etc.

To assess the effectiveness of the networking of entrepreneurial structures, it is advisable to single out the competition-oriented centers for the effectiveness of network forms of entrepreneurship, by which the internal mechanisms for increasing profitability and saving the costs of interaction participants at different levels are meant. These mechanisms are due precisely to entry into the network, and the managerial impact on these centers leads to an increase of the interaction overall efficiency. An example is supply chain management as a new business ideology, when participants in a chain, joining together

around a focus company, are oriented not on their local objective functions, but on the objective function of the whole chain, which is clearly aimed at the consumer. A higher level of interaction efficiency in the business system due to the introduction of the network forms of its development can be obtained as a result of the objective striving of each networking participant to maximize benefits and minimize costs, therefore it serves as a final characteristic of the economic system as a whole. The main criterion for a positive impact on the centers of the effectiveness of entrepreneurship network forms in the country are: the growing degree of satisfaction of participants with the results of networking; the growing degree of end-user satisfaction with “products” of networking; optimal distribution of resources in society between branches, sectors and areas of activity in the national economy.

It is proposed to refer to the efficiency centers:

- additional (non-core) activities that have become available and even necessary for the implementation of networking and which expand the possibilities for obtaining additional income;
- additional services (preparation of an auxiliary (intermediate) product);
- professional development of employees of firm network partners and the growth of their wages;
- the possibility of saving costs (on advertising, marketing, transportation, monetary services, and other transaction costs that accompany the core business) at the expense of network partners;
- an increase in the share of small and medium enterprises formed in the process of networking in the national economy;
- opportunities for innovative development through network projects;
- the possibility of increasing the amount of tax revenues to the budgets of various levels;
- the possibility of attracting additional investments (growth of investment attractiveness), including foreign ones.

The centers of efficiency of network forms of entrepreneurship can be viewed as a concretization of the theory of development poles and growth points of the innovation economy in relation to business entities. Under various names – “poles of competitiveness”, “growth poles”, “innovation poles”, etc. – these development mechanisms have existed in the world for several decades, demonstrating their effectiveness (Kudinov, 2009). Projecting this theory on the micro level, we note that in order to derive the competition-oriented efficiency centers, it is necessary:

- identification of existing and potential business partners that can become direct participants in the networking;
- creation of the necessary external infrastructure of interaction, including the regulatory framework, business climate, cultural and value installations and accepted norms of cooperation, support from science and education, etc.;

- encouragement (using financial, socio-economic and other levers) of combining business units in a network in order to identify sources of cost savings due to the use of a network (common) resource;
- strengthening of emerging business ties between economic actors, their institutionalization at the state (federal and regional) level;
- expanding the operation of efficiency centers by supporting foreign economic, cultural and other ties with external and internal business environments;
- promotion of the idea of networking, including the possibility of expanding the range of stakeholders;
- close cooperation with local authorities, specialized institutions, the region business community, as well as with the use of civil society institutions.

Networking leads not only to improving the efficiency of business units in the Russian economy but is also a powerful source of growth in their innovative activity. To realize this potential of network interaction as such, the following key system-forming factors are needed:

- adequate infrastructure of network interaction for all economic entities of the Russian Federation (including separate business structures, industries, territories, regions);
- availability of highly qualified personnel, ready to change, prone to innovation, the introduction of the principles of the network economy in business practice;
- institutional environment providing resource support for networking (regulatory, financial, technical and technological, information and consulting support of the state).

Thus, the Russian model of development of the national economy with the traditionally high level of state participation is able to provide a system of measures aimed at the innovative development of individual industries and regions of the Russian Federation.

7. Conclusion

New network structures formed as a result of networking are the result of evolutionary changes taking place in the economic system, which are more spontaneous. In order to transform this process in order to increase controllability, they need targeted actions by all actors involved in this process - entrepreneurs, state authorities and management, and society as a whole. Management of network processes that change the business system itself, the structure of the internal business space, is associated not so much with the achievement of the goals of networking as such, but with the study of this process, improvement of forms and mechanisms of networking and the principles of network culture, generation of new ideas that contribute to innovative business modernization.

References

Asaul, A. N., Skumatov, E. G., & Lokteyeva, G. E. (2004). *Methodological aspects of the formation and development of business networks*. Saint-Petersburg: Humanistic.

- Dubois, A., & Gadde, L.-E (2002). Systematic Combining: an Abductive Approach to Case Research. *Sweden Journal of Business Research*, 55, 53-56.
- Fikhtner, O. (2014). Conceptual vision of the essence and prospects of network development of the Russian business space. *Bulletin of Novgorod state University. Ser.: Economics*, 82, 22-27.
- Grandori, A., & Soda, G. (1995). Inter-firm networks: antecedents, mechanisms and forms. *Organization Science*, 16(2), 183-214.
- Kleiner, G. B. (2011). A new theory of economic systems and its applications. *Herald of the Russian Academy of Sciences*, 81(5), 516-532.
- Kleiner, G. (2017a). From the economy of individuals to systemic economy. *Voprosy Ekonomiki*, 8, 56-74.
- Kleiner, G. B. (2017b). Systemic modernization of domestic enterprises: theoretical justification, motives, principles. *Economy of the region*, T. 13, vol. 1, 13-24. <https://dx.doi.org/10.17059/2017-1-2>.
- Kudinov, A. (2009). Poles growth. Information and political portal. Retrieved June 12, 2018 from: <http://www.doc22.ru/information/analysis/462-2009-06-02-02-19-20>.
- Maslennikov, M. I. (2017). Technological innovation and its impact on the economy. *Economy of the region*, 4, 1221-1235. <https://dx.doi.org/10.17059/2017-4-20>.
- Michael, J. E. (2003). *Regional clusters: what we know and what we should know. Innovation clusters and interregional competition*. Berlin: Springer Berlin Heidelberg.
- Wagner, M., & Zidorn, W. (2017) Effects of extent and diversity of alliancing on innovation: the moderating role of firm newness. *Small Business Economics*, 49(4), 919-936.