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TERMINOLOGY OF THE FIRM'S NETWORKING POTENTIAL IN THE DIGITAL ECONOMY

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Abstract

The purpose of this research is to develop a model of network capacity as a methodological basis for the fullest possible assessment of the capabilities of firms in a digitalized economy and its empirical verification. Theoretical basis of the model was the work of representatives of institutional economic theory, resource approach, economic sociology and etc. Statistical analysis and expert evaluation methods were used. The development of the model of network potential is proposed on the basis of the analysis of the factors space from the point of view of interrelation of three structural elements, which have a defining, coordinating and perceiving influence on the development of intercompany interactions in the conditions of digitalization of economic activity. The defining element is formed by resource characteristics of participants of interfirm interactions, the coordinating element is directed on competent management of arising connections, and the perceptive element reflects the synergetic effects arising as a result of strengthening of interactions. On the basis of the model built, an empirical assessment of the network potential was made on the example of one of the leading enterprises of the state corporation "Rosatom", which produces products for oil and gas, electric power complexes and geophysical organizations and produces medical equipment. The results of the study showed that a partner's resources, coherence, commitment and trust in the partner are of high importance in the decision making process to create inter-firm relationships, which confirmed the proposed network capacity structure.

Keywords: Network potential, intercompany interactions, network structures, interaction efficiency, digital economy.

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1. Introduction

Nowadays, the relevance of intercompany interactions is due to both internal factors (the need to ensure regional development) and external problems associated with the imposition of economic sanctions and growing international isolation. It is the activity and receptivity of firms in the process of formation and strengthening of interfirm interaction that determines the strategic development of regional economies and industries of the Russian Federation. Features of modern economic processes, caused by the development of digital economy, consist of forming:

- the global ecosystem of the digital economy and the global digital space;
- a qualitatively new structure of economic assets that meets the economic priorities of the digital economy;
- approaches to the organization of manufacturing, trade, and services sectors, which take into account the achievements of the digital economy and are effective in the formation and development of the global digital space;
- principles of effective management of the formed and improved management of existing economic assets (resources);
- conditions for active participation of business community and civil society in the formation of digital economy space through the creation of attractive organizational and regulatory conditions and a space of trust in the digital environment;
- systems to ensure the security and sovereignty of national digital economy space (Kurdymov, 2017).

These trends have led to formation of new forms of the organization of inter subject-to-subject interactions, which are based on advantages of flexible structures, contracts and other types of agreements, association of external components in various types of network forms of the organization and adaptation to quickly changing market realities. Many experts recognize that it is the ability of economic actors to cooperate and manage joint activities for more efficient use of resources (including information), reducing uncertainty in the process of economic interaction and implementation of technological, product and organizational innovations leads to increased competitiveness of network structures (Popov, Semyachkov, & Simonova, 2017).

2. Problem Statement

The problem of formation and development of intercompany interactions was considered in many works of domestic and foreign scientists, but the trends of digitalization require new approaches to determining the degree of efficiency of subjects' activity in intercompany interactions. It should be noted that only when a certain level of development is achieved in terms of the requirements set by the digital economy, the economic entity is able to independently contribute to the development of mutually beneficial intercompany interactions and create the appropriate conditions for this, it is not only to use created practices, technologies and products.

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3. Research Questions

The effective functioning of an organizational entity, certain conditions and resources, i.e. capabilities, are required. In many studies (both Russian and foreign) authors interpret the availability of opportunities to achieve efficiency of functioning through the term "potential". According to Tripuzov (2016), the potential is "a degree of power in some respect, a set of means, capabilities necessary for something" (p. 217). E.A. Reanovich believes that the potential is "a set of available funds, opportunities in a particular area" (Reanovich, 2012, p. 4); and Shcherbakov (2017) thinks that is "a set of means, conditions necessary to maintain, maintain, and preserve something" (p. 47). The United Nations Development Programme defines "capacity" as "the ability of individuals, organizations and societies to perform certain functions, solve problems and set goals in a consistent manner". In the economic literature the activity of economic subjects as a whole is considered by researchers as a set of different types of potentials: innovative, intellectual, scientific and technical, production, resource, labor (personnel), export, economic, etc. This is driven by the capacity that is most important for the organization at the moment. According to the authors, one of the key characteristics of economic actors in today's environment will be the availability of such potential, which will provide them with the ability to attract partners to improve the effectiveness of intercompany interactions in the development of the digital economy. In this regard, the authors propose the definition of the economic category "network potential of the firm" as a set of means and opportunities to ensure the satisfaction of the interests of both business and society in the digital economy through a system of intercompany interactions. This interpretation is a supplement to the understanding of the network potential as "a set of means and possibilities for cooperation of economic agents for the purpose of increasing efficiency of network organizations" (Popov, Simonova, & Maksimchik, 2018, p. 1824) and as "a set of means and possibilities of firm in increasing efficiency of the network activity" (Popov, Semyachkov, & Simonova, 2017, p. 97). In this regard, it should be noted that the digital economy is evolving, taking into account such features of the emerging digital economy as the economic paradigm shift in traditional markets and social relations as a result of the penetration of digital technologies; change in the model of economic management; transition of the function of a leading mechanism of economic development to institutions based on digital models and processes.

4. Purpose of the Study

In connection with the above described features of economic processes, the purpose of this search is to provide a theoretical basis for the formation of a model of the most complete assessment of the capabilities of firms in the conditions of digitalization of the economy and its empirical verification. Thus, one of the objectives of the study is to identify the network potential as the ability of economic actors to provide a guarantee of survival and development in the digital economy through the formation of effective interfirm interactions.

5. Research Methods

The object of study in this study was the network potential of economic entities, and the subject is interfirm interactions in the digitalization of the economy. Logical and system analysis was used as the

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research methods. Statistical analysis and expert evaluation methods were used. The specificity of the problem of determining the factors affecting the ability of economic actors build effective long-term intercompany interaction in the development of digital economy, determined the structure of the study. The research algorithm included the following steps:

- the study of scientific research reflected in periodicals on the development of the digital economy;
- the formation of the author's vision of the network potential of economic entities in the digital economy;
- identification of factors affecting intercompany interactions in a digital economy;
- the selection and evaluation of the parameters of the network potential of economic entities in the digital economy.

6. Findings

A critical problem in the development of interfirm interactions in the digital economy is the creation of motives for cooperative behavior of all economic actors in the field of research and development, as well as a common innovation activity that allows the development of digital infrastructure in regions and countries. Nowadays there are a lot of studies devoted to the influence of digitalization on the economic subjects' activities provided by Russian researches (DeSousa, McConatha, & Lynch, 2011; Il`in & Anisiforov, 2012; Kovalenko, 2016; Lovchikova, Pervy`x, & Solodovnik, 2017; Palamarchuk, 2015) as well as foreign authors (Constantinidies, Henfridsson, & Parker, 2018; Popov & Semyachkov, 2018; Volkmann & Westkamper, 2013). It should be noted that state financing of innovation activities is uneven across regions. Since regional production systems have been rather diversed in terms of their composition and characteristics, various instruments of support and additional motivation are used by the state to ensure their active development, including complex interaction between the authorities and organizations supporting digital and innovation infrastructure development projects. These projects involve the development of intercompany interactions through IT technologies and the Internet. The correlation analysis of statistical data on the main indicators of the development of the information society of the Russian Federation confirmed the strong dependence of the development of the economy on it

- capital investment in information and communications technology equipment,
- the share of organizations that have used the Internet,
- the percentage of organizations that had a website,
- the percentage of organizations that used e-mail,
- the share of organizations that have allocated technical resources for mobile Internet access to their employees,
- the share of organizations that have used ERP systems,
- the share of organizations that used electronic document management systems,
- the share of organizations that have used electronic data exchange between their own and external information systems,
- the share of organizations that have used SCM systems,
- the share of organizations that have placed orders for goods (services) on the Internet.

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Thus, the analysis of the data proves that, from the point of view of interest in the development of intercompany interactions based on the requirements of digitalization, economic subjects show awareness of the importance of following the trends of modern economy. The basis for the formation of a new, digital and innovative economy is new technologies and knowledge, innovative (innovative) behavior of subjects and continuous technological improvement of the economic system.

According to the authors, thus, the networking potential needs to be considered in relation to intercompany interactions, since the mechanism for coordinating both digital and innovative activities of actors depends on them. Figure 1 shows the author's structure of interfirm interaction with economic development

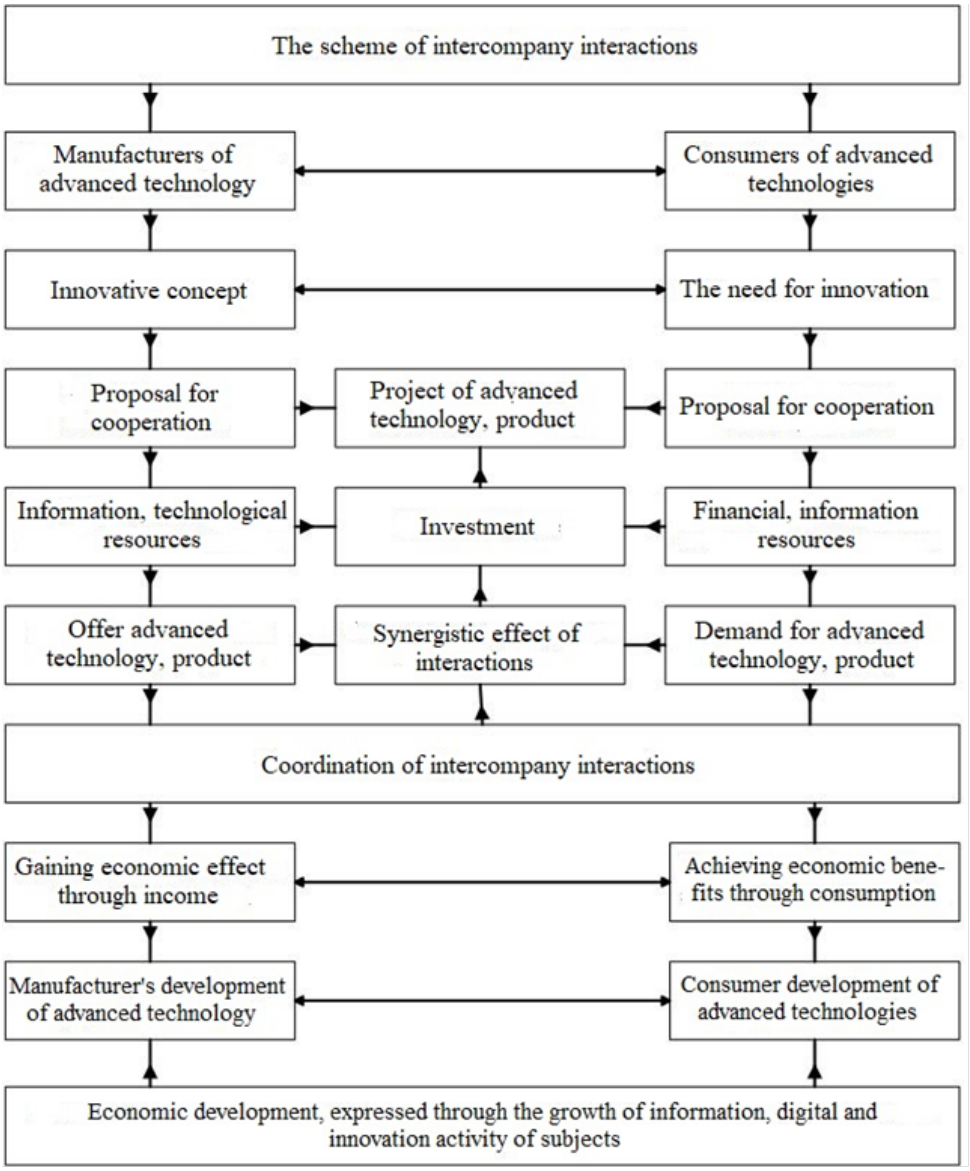

Figure 01. Interrelation of intercompany interaction processes with economic development

Thus, a knowledge-based society, based on innovative activity, on digitalization, requires a change in standard business schemes, a change in strategic priorities, which implies abandoning the traditional assessment of the effectiveness of intercompany interactions. According to the authors, cooperation

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between economic agents within the framework of the development of innovation activity can be carried out by introducing elements of digital economy into their structure (figure 2).

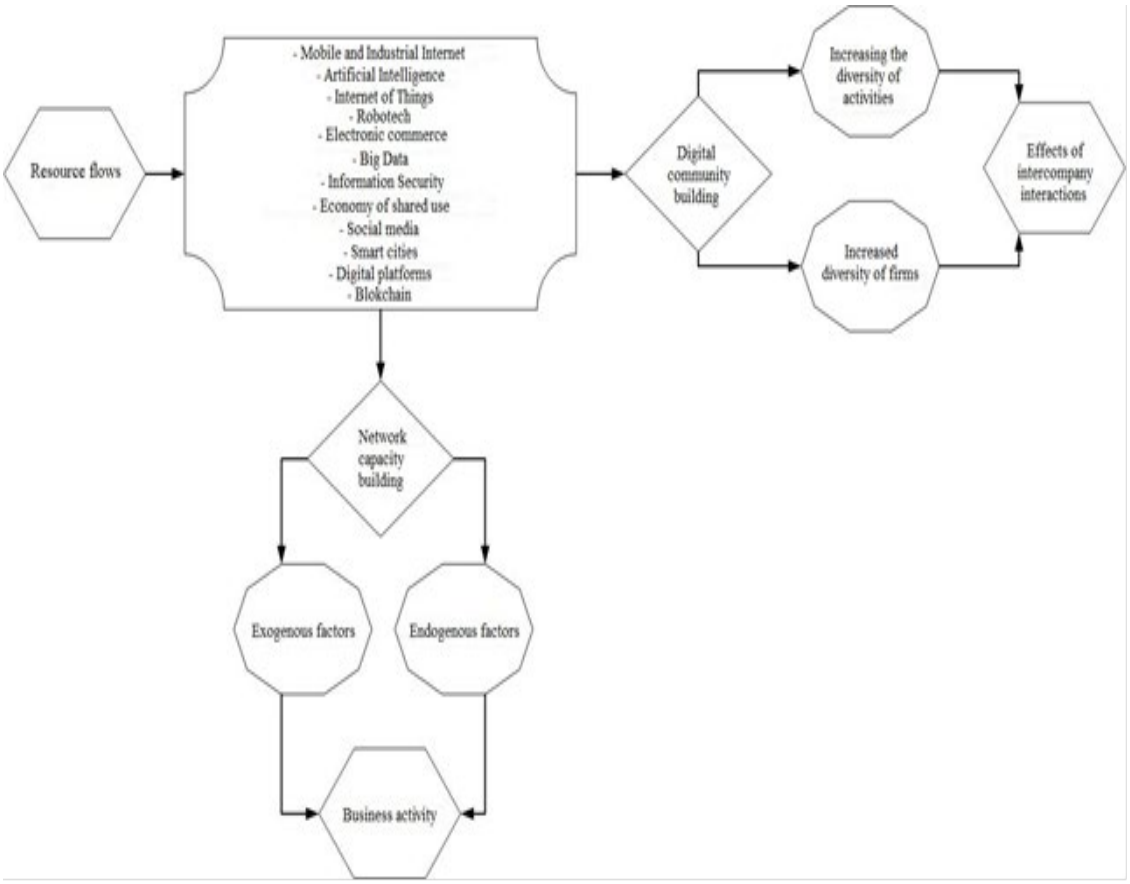

Figure 02. Company development model in the conditions of digital economy

The IT Network Capacity Assessment study proposes that the network capacity model be considered through the interrelationship of elements that have a defining, agreeing and approving effect on the effectiveness of network organizations (Popov, Simonova, & Maksimchik, 2018).

Resource flows, as a defining element, are characterized by the presence of basic conditions, without which economic agents do not have sufficiently significant motives to create long-term sustainable intercompany interactions. In the digital economy, this element reflects the presence of certain resource characteristics that allow economic actors to interest other agents in interactions through the multiplicity and complementarity of information and communication resources, as "computerization is the central and mandatory condition for the development of information interactions that determine industrial development" (Akberdina, 2018, p. 87). It is the presence of modern technical base that allows economic entities to accelerate the processes of accumulation, processing and transfer of information, analysis of large data.

The system of resource management and intercompany interactions becomes a consensual element. In addition to providing certain types of resources characteristic of the digital economy, firms require adaptive and protective mechanisms focused on coordination of intercompany interactions, primarily through the ability to electronically exchange data with other interactions. In the presence of such abilities

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the possibility of realization of effective electronic transactions in a mode of real time is realized, thus considerably accelerating processes of interfirm interactions. Availability of a high level of information openness to provide a guarantee of fair execution of contracts will ensure the resolution of the problem of lack of trust between the participants of relations. And the availability of special software to ensure the efficiency of decision making by officials based on tried and tested algorithms recognized as optimal will allow firms to develop their technological flexibility in response to changing requirements of digital economy factors.

The authors understand the perceptive element to be a synergistic effect arising from intercompany interactions, which provides the dominance of the effect of joint interactions over the sum of the effects of autonomous activity. The higher the synergistic effect, the more stable intercompany interactions are.

In the course of the research, the authors have formed an analytical model for assessing the network potential in the digital economy:

$$NP = \alpha \times RE + \beta \times AE + \gamma \times S,$$

where NP is the network potential, RE is the defining element (resource component); AE is the matching element (management component); S is the perceptive element (synergistic component); α, β, γ are the weighting coefficients of each of the components, determined in an expert way.

7. Conclusion

The developed model was the basis for an empirical study of the network potential of one of the leading enterprises of the state corporation "Rosatom", producing products for the oil and gas, electric power complexes and geophysical organizations and producing medical equipment. The data showed that a partner's resources, coherence, commitment and trust in the partner are of high importance in the decision making process to establish inter-firm relationships, which confirmed the proposed network capacity structure.

The research was conducted by means of a survey of enterprise managers to determine the importance of the network potential elements highlighted by the authors. To assess the highlighted elements, respondents were asked to rate the importance of each indicator on a five-point scale and then indicate the presence of these elements directly within the organization. Based on the data obtained, the significance of each of the indicators was calculated and the type of network capacity of the analyzed organization was determined (Table 1).

Table 01. Defining network capacity type

Category	Feature
Effective network capacity	Characterizes an economic entity as an organization that effectively uses its capabilities to implement effective intercompany interactions in the digital economy.
Effective with comments	It is necessary to consider that there are untapped opportunities that reduce the effectiveness of intercompany interactions in the digital economy.
Ineffective network capacity	Characterizes an economic entity as an organization that is not capable of creating effective intercompany interactions in the digital economy

The results of the research showed that one of the key strategies for this economic subject is to expand interaction with all stakeholders. At the same time, exhibitions, fairs and the Internet were identified as the main sources of information used to find partners for intercompany cooperation. Reducing costs, expanding sales markets and strengthening industry position, gaining access to know-how and reducing some risks were identified as the main objectives of the interaction creation. The network capacity can be assessed as effective and commented upon. This is due to the low level of use in the organization of "cloud" services, underdevelopment of cooperation in the form of creative insourcing and outsourcing and the rare use of shared platforms and technologies that allow for end-to-end automation and integration of production and management processes in a single information system. These shortcomings have led to a lack of growth in the number of new interactions. A small share of revenues received from the sale of goods/services using global information networks may be explained, perhaps, by the specifics of the organization in question. esides, the respondents pointed out that the main problems preventing the creation of effective interfirm interactions are the lack of information about the production capacities of industrial enterprises and the degree of their participation in production cooperation, the absence of an internal incentive mechanism for the participation of enterprises in the processes of interfirm interactions, as well as the undeveloped market of applied services (information, consulting, engineering, design, engineering, etc.) for enterprises.

Thus, the research concludes that in order to create and strengthen intercompany interactions in the digitalization of economic activity, organizations need to develop network capacity through a system of information and communication resources that allow economic actors to accelerate the accumulation, processing and transmission of information, analysis of large data and solve the problem of isolation, isolation and inconsistency.

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