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**GLOBAL FACTORS CHANGING MODELS OF DEVELOPMENT
MANAGEMENT OF RUSSIAN INDUSTRIAL CORPORATIONS**

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Abstract

Actuality of research of the role of global factors in the change of management development of Russian industrial corporations is conditioned by the growing complication of global market, by focus on industry and society on a permanent change and progress, by the increasing role of scientific and technical infrastructure of industrial corporations and tasks in the area of researches, developments, planning, experience tests and service. System influence of external factors stipulates the development of new forms of interfirm co-operation and models of management development of Russian industrial corporations allowing to reduce negative consequences and risks of global challenges. In this regard, this article is aimed to identify the forms of interfirm co-operation and types of strategic partnerships that allow to develop the models and processes of organized interaction, including consideration of global market factors, implementation (in accordance with international norms) of technologies into production, integration of regulations and procedures required for the implementation (in accordance with international norms) of technologies into manufacture, integration of regulations and procedures required for the realization of management processes for the development of industrial corporations. The article presents an analysis of the most important factors of the global market and their role in changing the models of interaction of industrial corporations in the global environment. The features of organizational interactions and forms of interfirm co-operation and strategic partnership of the Shlumberger Industrial Corporation and the Russian Federation Fuel and Energy Complex Corporations are determined.

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Keywords: Global factors, global changes, change management, industrial corporation, integration model of interaction, interfirm partnership.



1. Introduction

In the second half of the last century, the role of industrial corporations began to increase in the economy of the leading countries of the world. By the beginning of the twenty-first century, US industrial corporations included enterprises from 25 to 50 branches. The total annual sales of the six largest corporations in Japan amounted to 15% of GDP, they controlled from 50 to 75% of the country's industrial assets (Hill, 2013). Russian industrial corporations TEK provide more than half of budget revenues. Over the past two decades, the influence of the globalization of markets has increased on the activities of the largest industrial corporations (Arvanitis & Bolli, 2013). This was facilitated by the destruction of barriers to international trade, the formation of consumer preferences in different countries in a single identical form (mobile communications, means of mobile communications, credit cards, soft drinks, game consoles, hamburgers) of the international basic global product of the corporation. The offer of the basic product influenced on the creation of the global market. Not only industrial and transnational global corporations, but also mobile small enterprises contribute to the development of the global market. In the United States, about 90% of exporting firms with fewer than 100 employees provide up to 20% of exports. In Germany, about 90% of small and medium-sized enterprises participate in international markets as exporters or as participants in international production (Minsky, 2008, Kim & Vonortas, 2014). Global markets do not exclude competition, but it has also become global (Srholec, 2015, Marucheck, Greis, Mena, & Cai, 2011).

The globalization of production has created new forms of organization of production and the supply of goods and services from different countries of the world, extracting primarily the advantages of national differences in the cost and quality of production factors (labor, energy, land, capital). New organizational forms influenced on the change in interfirm co-operation and corporate development management models. Increasingly, outsourcing is used not only to reduce production costs, but also to “bring the producer closer to the consumer”, reducing transportation costs. At the same time, the worked-out strategies for the development of industrial corporations began to be tied to organizational changes and the transfer of competencies (Berssaneti & Carvalho, 2015).

2. Problem Statement

Currently, global factors and a growing global market have a significant impact on the achievement of the strategic goals of Russian industrial corporations. The effectiveness of achieving strategic goals is assessed by a large variety of peculiar indicators, the measure for achieving strategic goals is difficult to determine (often the departments executives “correct or clarify the main goals in accordance with market changes) and often lead to the adjustment of goals with the help of a large number of parameters and indicators. A difficulty in the management of industrial corporations is created by innovative projects aimed at the production of high technology products. Projects themselves become complex and are implemented with the participation of several organizations and divisions of industrial corporations and the corresponding models of management integration at all stages of project implementation (Garcez & Sbragia, 2013, Sanchis, Saiz, Castellano, & Poler, 2012).

3. Research Questions

In this regard, the study of the role of global factors in changing of the models for the management development of Russian industrial corporations is associated with the following questions:

1. What impact do the global challenges have on the activities of industrial corporations in the fuel and energy complex (FEC) of Russia?
2. How are the forms of interfirm co-operation and the types of strategic partnership of industrial corporations changed under the influence of globalization?
3. What are the most adaptive models and processes of organizational interaction under conditions of changes in the global market?
4. What problems of management and production make it difficult to manage the development of corporations in the context of the systemic impact of global challenges?
5. What models of interfirm co-operation of Russian industrial corporations are recommended to use for damping the impact of global challenges?

The object of this research is Russian and foreign industrial corporations, their forms of interfirm co-operation and types of strategic partnership.

4. Purpose of the Study

The purpose of the study is to determine the influence of global factors on changing models and strategies for the development of industrial corporations, to identify the features and problems of organizational interaction of corporate units in the context of global challenges and to develop proposals for the formation of models of interaction between departments and making decisions about inter-firm cooperation of Russian industrial corporations.

5. Research Methods

In the process of research we used: systematization of global factors and peculiarities of the global market; generalization of concepts and strategies of foreign industrial corporations taking into account the influence of global factors on production efficiency and changes in company strategies; methodology of modeling interfirm co-operation of industrial corporations of the fuel and energy complex of the Russian Federation for the implementation of development strategies in the context of globalization; system analysis of management and comparative analysis of the performance results in Russian industrial corporations in the oil and gas industry; the method of expert assessments of the effectiveness of the used models for the organization of management of the processes of development in divisions of a corporation. The study and synthesis of foreign and domestic experience of organizational interaction and interfirm co-operation of industrial corporations are used to develop a model of organizational interaction and interfirm co-operation of Russian industrial corporations in the fuel and energy complex of the Russian Federation in the field of innovative research and development projects management of R & D.

Experimental work was carried out in the structural units of industrial corporations in the fuel and energy complex of Russia.

6. Findings

The most important areas for the development of industrial corporations in the fuel and energy complex of Russia are associated with the development and implementation of oil production technologies in difficult geological conditions, technologies for converting gas into liquid fuels, advanced oil refining, production of modern oils, new pumping equipment and developing technologies of the future - when hydrocarbons are exhausted, switch to hydrogen production. The implementation of a technological breakthrough, despite the power of industrial corporations in the fuel and energy complex, is associated with overcoming of the existing problems of production and management (Omobhude & Chen, 2017, Yu, Subramaniam, & Cannella Jr, 2013).

In industrial corporations of the fuel and energy complex a decrease in production efficiency is associated with increasing costs for production and management, with an underestimated assessment of the role of technology and organization, with a high cost of technological losses, personnel orientation towards short-term goals with resistance to change, an increase in the number of professions requiring high qualifications and competencies, increasing speed and volume changes (Ahuja, Soda, & Zaheer, 2012).

Global factors have a particular impact on the implementation of projects aimed at the production of high technology products carried out by corporations (Van Oort, Burger, Knoblen, & Raspe, 2012):

- scientific and technological progress accelerates the creation of new technologies, the development and production of high-tech products and, at the same time, contributes to the creation of social and economic institutions of a changing society protecting the needs and preferences of the consumer;
- modern society creates new forms of social interaction with industrial companies taking into account its focus on constant change and progress;
- business development of industrial corporations is carried out only thanks to new technologies based on scientific achievements;
- research and development have become a part of the production chains that optimize the processes of creating and the costs of production, and the promotion of new products and services;
- technologies and innovations have become the focus of attention not only at the level of corporations, but also at the level of the state which can create additional advantages for corporations;
- the most important condition for the efficiency of industrial production is the scientific and technical infrastructure and the tasks it faces in the field of research, development, design, pilot tests and service. The research results confirmed the hypotheses of Arvanitis & Bolli (2013).

Integrated management models are proposed for managing complex innovation and investment projects (De Faria & Schmidt, 2012). They include the definition of roles, responsibilities, communications and connections of all participants in a complex project who perform work controlled by two or more parties and take the opportunity to respond jointly to the risks of influencing factors (Aarikka-Stenroos & Sandberg, 2012). Models of integrated management of complex corporate projects are based on the development of a corporate standard and a corporate project management system

including the development of a project management information system, project management services, personnel training and the involvement of project management service specialists in a project implementing a corporate project management system (Nugaybekov, Maksin, & Lyashchuk, 2015).

Foreign industrial corporations that implement dozens of complex projects every day, including R & D (Shlumberger Corporation), use organizational solutions. They form an innovative infrastructure with several types of infrastructure elements: research centers (their functions are scientific and technical research before the stage of trial sample production), technology centers (development of production technologies, modeling and bringing to a commercial level) and research and production centers (development and production of high-tech equipment). In Russia, Shlumberger has a research center in Moscow, a technology center in Novosibirsk (academic campus) and a production center in Tyumen.

Creating an innovative infrastructure as a single center is considered as one of the directions of development of industrial corporations in the fuel and energy sector. But its implementation is connected with the need to develop models of interfirm co-operation and integration of corporate division management in the context of the increasing influence of global factors (Table 1).

Table 01. The influence of global factors on the activities of industrial corporations in the fuel and energy complex of the Russian Federation

Global factors	Global factors Global challenges of industrial corporations in fuel and energy sector
Political factors	Changes in terms of trade and supplier diversification Reconsideration of contractual agreements Strengthening reputation as a reliable manufacturer and supplier Change of quotas, duties, trade embargo Threats to the use of foreign high-tech mining equipment
Technological factors (technology and innovation)	Increasing the efficiency of alternative energy technologies (renewable energy sources) The use of innovative gas production technologies (shale gas in the United States, Europe, China) and a decrease in demand for oil and oil products Accidents and failures in work in divisions of industrial corporations of the fuel and energy complex due to obsolescence of equipment and technologies
Market factors	Redistribution of global gas and oil flows Entering the global market for new suppliers Loss of target consumers

Industrial corporations in the fuel and energy sector are actively seeking integrated forms for the implementation of complex projects aimed at developing and introducing new technologies to intensify oil production, the depth of its processing and the development of new high-tech equipment for geophysical surveys, drilling and enhancing oil recovery. However, the implementation of projects in the innovative areas of the oil and gas industry in Russia is considered only in the case of a development management model with preservation of management from a single center. On the one hand, the wish to

maintain a rigid vertical of management is connected with the peculiarities of corporations. The scale, the multi-sectoral nature of the activity, and the structure of the corporation are such that an industrial corporation plays the role of a market determining the needs for technical developments, a functional customer, formulating specific technical requirements and setting the desired deadlines, as well as the investor financing the development. This creates the conditions for a rapid transition from research to production. On the other hand, in the process of restructuring with the formation of divisions of an industrial corporation as independent economic entities there were wide areas of vertical interactions (budgeting, regulations, prescriptions, volitional decisions, etc.) that have both positive and negative effects on the performance of decentralized divisions and corporations in general. The sphere of horizontal interactions between the departments for the execution of works and services has remained insufficiently developed (from the standpoint of the market and the independence of operation). This prevents the implementation of other models of the development of the corporation. At the top level of the fuel and energy complex management the directions of its strategic development are being developed, but their implementation is based on the established system of vertical management which impedes the development of business units. Thus, the development strategy worked out by the management of the corporation remains, most often, not linked to the performance of the divisions. Researches have shown that the main causes of mismatch in management are hidden in the “historically established” system of development and decision-making with a large number of hierarchy levels, in a misunderstanding of independence boundaries in departments, not developed rules and principles for integrating activities in the absence of transparency of management and an effective budgeting system. These features, most typical for industrial corporations of the fuel and energy complex, create the basic conditions for the loss of controllability between interfirm connections of decentralized divisions of industrial corporations of the fuel and energy complex. As part of the management technologies used with the priorities of vertical relations, the process of implementing a corporation's development strategy and the process of making a profit in its divisions become contradictory in many cases. Global challenges are helping to deepen inconsistency:

1. The changing market conditions make it necessary to adjust the goals of the corporation continuously. Adjustment of goals leads away from the chosen strategic direction. In the divisions providing production due to its high inertia, the requirements for increasing profits, the adjustment of strategic decisions is often not made or cannot be implemented.

2. The management models used by the divisions of the corporation are focused on the implementation of operational solutions, traditionally aimed at reducing costs (without taking into account the specifics of the functioning of the division).

3. Bureaucratization of all management processes of decentralized units leads to loss of adaptation to global challenges, weakening control over costs and production costs, and a drop in the profitability of non-core assets creates losses in diversified corporate areas. The transition to production in remote areas of the Far North in the face of falling stock prices and rising investment costs, determines the transition to the introduction of new models for managing the development of industrial corporations in the fuel and energy sector.

7. Conclusion

It is established that the global challenges form new conditions for the functioning and development of industrial corporations. Under these conditions for managing the development of industrial corporations, integration models of organizational interaction and inter-firm cooperation of Russian industrial corporations of the Russian fuel and energy complex are proposed using integration of development projects and their implementation processes. This helps to improve communication and coordination of strategies between corporate divisions.

Interfirm collaboration complements the traditional corporate hierarchical management structures of multiple horizontal links used in corporations that complicate development management.

The experience of creating an innovation infrastructure with several types of infrastructure elements for the implementation of integrated innovation R & D projects confirms the prospects for the proposed models for managing the development of industrial corporations in the fuel and energy complex of the Russian Federation.

The most important areas in the development of industrial corporations in the fuel and energy complex of the Russian Federation are overcoming the technical and technological gap between foreign partners and the formation of new organizational interactions for the joint solution of economic and social problems. The development of the global market is accompanied by the constant emergence of global challenges and is pushing industrial corporations to search for new forms of interfirm co-operation and models for managing the development of corporations. This study helped to get answers to the research questions and opens up a wide field for discussion.

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