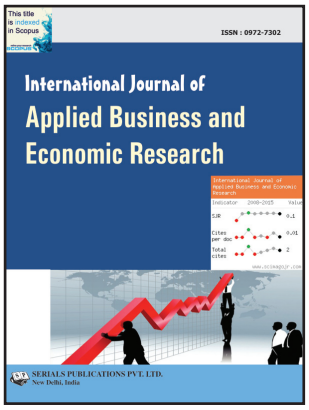

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Conceptual Approaches to Overcoming Turbulence in the Innovative Development of Russian Industrial Enterprises

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ABSTRACT

The article attempts to give scientific justification to rational construction of the National strategy of overcoming turbulence in the innovative development of Russian industrial enterprises that is expected to help identify new competitive advantages and improve those connected with the growth of scientific and technological potential, of both the state and business. It is argued that in the current socio-economic conditions, the most promising direction is the development of cutting-edge technologies. The role of knowledge, innovation market, and other points of high-tech growth are determined. The necessity of the development of innovative territorial clusters based on the interaction between representatives of science, business and the government is substantiated. The choice of priority directions of innovation development is made keeping in mind international institutional, scientific, technical and technological forecasts and trends and is aimed at successful identification of the determinants of high-tech growth and formation of competitive advantages of the Russian economy that will allow to overcome the turbulence in the innovative development of the Russian economy.

Keywords: Turbulence, economic crisis, market failures (fiasco), raw materials export model, knowledge, high technologies, development institutions, State Atomic Energy Corporation "Rosatom", innovative territorial clusters.

1. INTRODUCTION

Currently, the Russian economy is still in a state of turbulence, which has been in place since the 1990s, and resulting from the implementation of the recommendations of the Washington consensus regarding Russia's transition to market economy (Nosova, Novichkov & Novichkov et. al., 2016). It is widely believed that as long as the Russian government follows these recommendations, nothing will be changed in the country's economy.

It is necessary to abandon the liberal economic model and make the transition to the innovative development through centralized administration, as was the case in the Soviet Union during the German occupation (1941-1945). During that time, the nation managed to win the competition with the German industrial economy. There is a famous phrase: 'Russians do not give up!' That is still true. A large number of scientists, experts, theoreticians and Russian practitioners firmly believe in that. They are all convinced that the reserves of the raw-material export economic model have been exhausted, and that the development of the country requires a certain rate of economic growth. As the President of the Russian Federation Vladimir Putin mentioned: 'It is important to strive for real change in the economic structure, regaining the leadership in a number of industries, developing small-scale and medium business... We cannot be satisfied with the situation when the rest of the World holds Russia a financial and commodity hostage. One-sided raw material economy does not allow Russia to develop its potential in a full way, and many things cannot be realized because of this' (Putin, 2014). In March 2016, the Russian Nobel laureate Zhores Alferov stressed: 'In the current situation, we need to develop high-tech sectors of the economy' (Alferov, 2016). However, the situation is not improving. In 2016, Russia was not able to overcome the failures in the market economy. The progress was insignificant, if any. How much more effort is needed to convince the Russian government that nowadays Russia needs a new model of economic governance? The main trend of the new model should be in the field of centralized control of high-tech development, taking into account the participation of private capital, both foreign and domestic. Why has domestic capital become comprador? It must be stopped once and for all.

The economy based on high technologies is the only possible strategy that will help to overcome the turbulence of the Russian economy. This is not a new position. It was brilliantly formulated by Karl Marx in his analysis of the ways to get out of crisis on the basis of massive renewal of capital. In summary, this mechanism is as follows: an economic crisis is the result of overproduction, i.e too many goods have been produced to be profitably sold. Therefore, there is overstocking of production, which results in inevitable price reduction and can lead to bankruptcy. In order to avoid this, the capitalist strives to modernize the production capacity by introducing new high-performance equipment. There is a demand for the latest technology which entails attracting new qualified workforce. Gradually the economy recovers, which ultimately leads to its rise to a higher level. The role of the crisis then, on the large historical scale, is not destructive. Crises are the calls for the modernization and renewal of fixed capital.

So, is there a way out of the Russian turbulent economy? There is a dilemma: which way is more preferable for modern Russia? In modern domestic economic literature, innovative economic development became a kind of fetish. Innovations are considered a panacea in treatment the economic crisis. Innovative development becomes the fundamental paradigm, a mechanism for addressing strategic problems of the Russian economy (Bodrunov, 2015). The main objective of innovation (or new innovative economy) is viewed as the core of economic policy representing a set of specific activities – creation of innovative

material production (industry, transport, construction, communications, agriculture, etc.) in the national economy. The focus of discussion is not the volumes or prices of the manufactured products but the role of innovation as a basic component of the structural change of economy and modernization of the Russian economy. We agree with this problem statement and consider it productive.

In the current socio-economic conditions, it can be argued that the most promising areas for the development of innovation in the domestic socio-economic system include the production and dissemination of knowledge, which provides an effective mechanism for growth in mining and manufacturing industries, in construction, transport, agriculture, tourism, information and communication technologies, as well as in the service sector.

2. THEORETICAL ANALYSIS

Nowadays, knowledge is becoming a key resource for organizations' development and the foundation of innovation. The idea of knowledge management is based on the premise that there is a large amount of ambiguous but freely available information that might assist the work, greatly increasing its effectiveness. In other words, there is a great resource of knowledge that can (sometimes must) be used, for example, in the interests of corporation development. Under normal circumstances, this knowledge is scattered and rather disorderly. In its use, chance and luck play a significant role – somebody asked someone the necessary question, had the right document at hand, etc. Practically speaking, we are talking about how to create a navigation scheme for the sources of knowledge, which all participants of the collective process could use to find the necessary information quickly and without much effort. This raises a number of problems.

First, there is no consensus about what exactly is meant by "knowledge" in this context. In each case, it can be understood in different ways.

Secondly, as a consequence, there is a problem to determine what knowledge is needed and what is not.

Thirdly, as far as the applicative knowledge as a commodity is concerned, we face the challenge of formalization and measurement of this intrinsically intangible and unstructured asset (Milner, 2008).

This is followed by numerous technical implementation issues concerning acquisition and practical application of knowledge. The possible answers to these questions depend on the manner the more common problems are solved in each case. Anyway, this originally chaotic area is ordered by a joint effort (Nonaka & Takeuchi, 2011).

Three major segments of knowledge management can be identified.

The first one is the necessity to digitize, identify, and structure everything. This is content management.

The second one is the human factor. We gain knowledge through human communication. People should freely express knowledge, describe, formulate and collectively confirm it. This is communication. And this is direct control over the scientific community.

The third one is a set of legal issues: it is necessary to sell what has been digitized, preserved and documented. In the latter case, the standardization programs play an important role. Their purpose is to create a tool for capturing and measuring units of which 'knowledge' is made up.

The main sub-systems of knowledge management are:

- search of reliable sources of information and acquisition of new knowledge;
- formation of knowledge base, its documentation and storage;
- standard testing of knowledge or benchmarking.

The process of formation, preservation, dissemination and using of knowledge is one of the cornerstones of management processes of innovative activity of the State Corporation 'Rosatom' and its organizations (Nosov, Putilov & Vorobyov, 2014). Like any business process, this process needs to be managed, planned and controlled. For this purpose, the State Corporation 'Rosatom' has developed and implemented a 'Program for the formation of the management system of corporate knowledge for 2012-2015'. The use of foundations of knowledge management will ensure implementation of the program and increase the effectiveness of knowledge management, including the rights for the results of intellectual activity within the State Corporation 'Rosatom' and its subsidiaries. The program of formation of management system for corporate knowledge in the nuclear industry is aimed at achieving the following main goal: the development and implementation of solutions in order to ensure transition of the State Corporation 'Rosatom' and its subsidiaries to the modern enterprise knowledge management technologies in concordance with the target model of corporate knowledge management of the State Corporation 'Rosatom' (*"'Rosatom' Makes Corrections to its Business Model*", 2017). In the process, the following problems must be solved:

- to develop and implement mechanisms of identification and preservation of knowledge, including the results of intellectual activities (RIA);
- to develop and implement mechanisms for the organization of knowledge circulation and to provide employees of the State Corporation 'Rosatom' and its subsidiaries the access to data, information and knowledge;
- to create infrastructure for the collection and storage of formal (documented) knowledge of the results of scientific and technological activities (STA) of the State Corporation 'Rosatom';
- to validate and disseminate best practices of RIA commercialization;
- to ensure preservation and continued development of scientific and technical competence, to introduce talent management practices;
- to create infrastructure for the cooperation between the employees of research, design and production organizations of the State Corporation 'Rosatom' and external experts.

3. RESULTS

International experience in sustainable development: It should be mentioned that the developed countries have already entered the path of innovative development by introducing know - how in the economic system. Developing countries, including Russia, as a rule, use outdated technology and production methods, which hinders their development in the global economic system. The results of historical analysis of the causes and consequences of economic growth in many developed countries show that they needed a large period of time to ensure the most important current trend to an increase in the world's scientific and technological progress, leading to maximization of profit and competitiveness of both the world economy and specific goods and services.

Russia intends to shorten the way out of the crisis through the development of high technology. The Government priced the anti-crisis program for 2015-2016 at 2.172 trillion rubles. However, 1 trillion rubles was allocated for additional capitalization of the banking system (*"The Russian Government has priced the anti-crisis program estimated in 2015 at 1.3 trillion rubles",* 2015). In our opinion, with this level of funding, it is unreal to reach full innovative development of the economy of our country in the next few years.

In the modern globalized world, where competition is one of the most important factors of socio-economic growth, science, technology and innovation should be considered the main drivers of competitiveness at every level: from micro economy to the level of the global economy. The results of research show that there are many different sources of competitive advantages in the global economic system. In our opinion, one of the main sources is the opportunity and ability to develop, transform and apply knowledge and skills, as well as to perform continuous search of new methods and scopes of their implementation in the unstable environment. As it is known, quantitative and qualitative indicators of achievements in science and technology largely determine the dynamics of socio-economic growth.

Institutional reliability of innovative development of modern economy: It must be admitted that the modern economy grows not only on the basis of transformation of resources into finished products. At the end of the twentieth century and the beginning of the third millennium, it became clear that in the context of globalization, the socio-economic development of each country without institutional changes is either impossible or too difficult.

The emphasis on the role of institutions in economic development since the middle of the XX century has been connected with the criticism of neoclassical economics that ignored non-economic environment where individuals make decisions. Neoclassical economic theory would focus on the direct production while institutional economics – on the institutional relations that accompany the production and penetrate into it. This is 'the strong point' of institutional economic relations. Interacting with production and penetrating into it, institutions provide a dynamic character of the economy and society. Institutions, in fact, constitute the foundation of institutional economy.

Institutions form the framework for the circulation (exchange) of products, income and expenses on the basis of various forms of agreements.

The exchange model of modern economies causes the need for institutional reliability. Thus, the function of institutional relations is to facilitate the exchange. The exchange involves transactions within the existing set of institutions. Accordingly, there are transactional costs. These are the costs, which are associated with the transfer of property rights; the costs, arising in the course of the contractual relations between the economic actors.

In the most general sense of the word, these are the costs of operation of economic or social system. They consist of regular transaction costs (e.g. specific investment in the creation of institutional units) and variable transaction costs (e.g. costs that depend on the number or volume of transactions).

The most important thing in understanding of the transactional costs is the fact that nothing is done free of charge in the market economy, and everything has to be paid for.

Hence, the more intensive exchange in the economy becomes, the higher (ceteris paribus) the level of transactional costs is.

The building of an effective innovation market occupies a special place in order to reach the development of innovation in all spheres of economic activity. Here Russia will be able to take some market niches. We understand innovation as the process of materialization and implementation of new scientific knowledge through their introduction into the market in the form of new products, technologies, methods, forms of organization of production etc. Innovations have a pronounced multiplier effect. This effect manifests itself in a close relationship with the economic and social aspects. Innovations contribute to market development of new technologies and new products (goods and services). Formation and effective development of the innovation market are one of the most important mechanisms of innovative sustainable development of the society. Construction of the complex architecture of the innovative segment of the modern market economy is currently in the stage of active formation. On the one hand, actors of innovation market are the creators and patent holders of scientific and technical innovations, and, on the other hand, they are their potential customers. Different market actors can act as intermediate chains in this system, including those in the field of dissemination and application of innovations, various financial institutions, venture capital, consulting, advertising and education companies, as well as many public and private entities.

To implement innovation policies at an enterprise, it is necessary, on the one hand to provide it with a sufficiently high level of support with fixed assets. On the other hand, it is necessary to have optimal share of intellectual capital in the overall structure of capital investments, as well as the presence of substantial incentives for the implementation of innovation policies. These incentives are defined by the national investment policy, which is aimed at innovation development.

Low professionalism of innovation management at many enterprises also deserves special mention. In our opinion, these circumstances significantly hinder the formation of innovation market.

The main economic tool for sustainable development in the formation of an effective national innovation market should be innovation activity. In the modern economic practice, marketing research is an integral part of strategic social and economic programs, which are developed and implemented by many economic entities.

Nowadays, innovative territorial clusters need to be created in order to build innovative economy of modern Russia (Nosova, Mackulyak & Lyubimtseva et. al., 2016).

Clusters in the innovative development of the economy: In the context of formation of an effective market mechanism in Russia, cluster complex plays an important strategic role in the economy. In our opinion, the highest priority tasks, the solutions of which may provide deep restructuring and modernization of the economy, the steady growth of the main macroeconomic indicators, including the maximization of the quality of life of the population, lie in the field of cluster development. Thus, the implementation of policy of formation and subsequent development of innovative regional clusters is an integral part of the system of strategic tasks of the development of Russian economy.

The combination and interaction of such concepts as sustainable economic development, regional policy, business planning and 'territorial' innovation, and clusters innovation, which ensure the interaction between sectoral and territorial development are increasingly becoming the integral factors of contemporary social and economic development of the country. The society will have to solve the major problem of the development of science, engineering and technology, harmonizing it with regional development. Clusters are indispensable for that.

In our opinion, there is an urgent need in cluster centers. They act as a link between science, manufacture and development institutions. The largest development institutions include the State Corporation Vnesheconombank (VEB), the State Corporation 'Russian Corporation of Nanotechnologies', the 'Russian Venture Company', and the foundation for the development and commercialization of new technologies (Skolkovo). They support business projects through financing and provision of infrastructure support, as well as R&D co-financing. In fact, clusters are high-tech transfer centers. They develop mutually beneficial cooperation between all actors of the innovation market by facilitating the search for partners for joint innovation projects and the promotion of advanced technologies and products in the marketplace.

Definition and implementation of these main areas allow to intensify the process of formation of high-tech domestic market which will mean a successful adaptation of the Russian economy to the world standards.

4. CONCLUSION

A number of important activities must be carried out as soon as possible for the active and effective development of the national innovation activity that would be in line with the global trends and requirements within the existing complex system of economic governance. They are:

- the determination of economic value of territorial resources in the process of economic reproduction, namely reproduction of innovative type;
- state stimulation of large enterprises in order to develop their own innovation and research departments (intra-science);
- the establishment of specialized structures for the commercialization of innovative technologies, and their transfer;
- formation of innovative points of growth by creating innovative regional clusters.

All this will facilitate the transition of Russia to high-tech production model in the short term.

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