

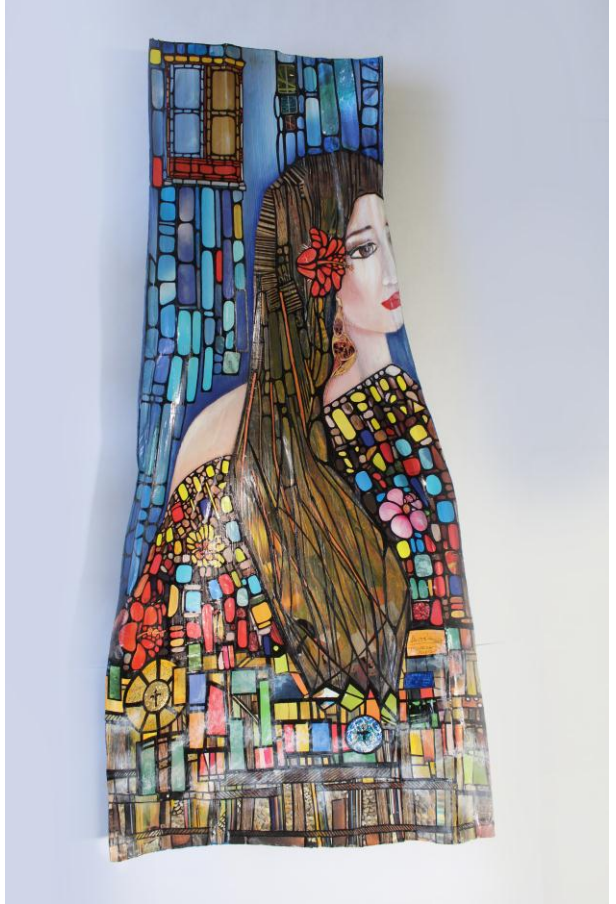
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Organizational tools for overcoming the systemic contradictions of innovative development

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Abstract

The article discusses the systemic contradictions of innovative development of the Russian economy, which have proved very difficult to overcome either by market, state/corporate, management tools or planning. The methodological basis of the research is the principles of dialectical logic, which presuppose the consideration of the economy as a multifaceted category with objective and subjective characteristics. As a result, it becomes necessary to form new economic relations corresponding to the challenges of the knowledge economy. In conclusion, the integration of all the requirements is possible only within the framework of conceptualization and effective implementation of a national innovative digital platform.

Key words: Innovations, Investments, National Reproduction, Social.

Herramientas organizativas para superar las contradicciones sistémicas del desarrollo innovador

Resumen

El artículo analiza las contradicciones sistémicas del desarrollo innovador de la economía rusa, que han demostrado ser muy difíciles de superar ya sea por el mercado, el estado / empresa, las herramientas de gestión o la planificación. La base metodológica de la investigación son los principios de la lógica dialéctica, que presuponen la consideración de la economía como una categoría multifacética con características objetivas y subjetivas. Como resultado, se hace necesario formar nuevas relaciones económicas correspondientes a los desafíos de la economía del conocimiento. En conclusión, la integración de todos los requisitos solo es posible en el marco de la conceptualización y la implementación efectiva de una plataforma digital nacional innovadora.

Palabras clave: Innovaciones, Inversiones, Reproducción Nacional, Social.

1. INTRODUCTION

Nowadays, many questions remain about the innovative characteristics of the Russian economy, pointing to serious systemic contradictions in its development. Thus, according to the latest data of the World Intellectual Property Organization (WIPO), the Russian Federation ranks 45th out of 127 countries whose innovative development has been evaluated. At the same time, our country demonstrates a positive trend in creating knowledge (number 22), but in the areas of knowledge dissemination (number 43) and so-called influence of knowledge (number

111) Russia still demonstrates poor results. Besides, Russia is among bottom-10 countries in terms of innovative relations, quality of regulation, investment activity, and legal environment, the growth of gross domestic product per capita and per unit of energy used. And only two Russian companies are among the hundred most advanced innovative enterprises in the world - Magnet and Norilsk Nickel are both in the bottom half of the ranking. At the same time, all the specific features of Russian innovative development identified by our scientists can be preserved. According to comparative analysis, it turned out that relatively good positions of our country in ratings were provided by the parameters of spending on research and a high level of human resources against the backdrop of a serious backlog in the effectiveness of innovative approaches application. At the same time, Russia's indicators were markedly different from virtually all rated countries, whether leaders or outsiders (Kretov, 2015).

Therefore, with a decent potential and resources for innovative development, the final results of economic activity are far from real possibilities. The systemic nature of the contradictions in innovative development is further confirmed by the fact that neither planning or market or state/corporate incentive measures that were consistently undertaken over the past thirty years have led to any noticeable change in the situation (Tatuev, 2016).

2. METHODOLOGY

The theoretical basis of the research is the fundamental monographic works, scientific articles and applied research of domestic and foreign scientists involved in the theoretical and practical aspects of

innovative development of the economy. This research consist of the domestic authors on the problems of innovation development; development in the formulation and implementation of comprehensive state economic policy, including innovation; development in the field of stimulation and activation of innovation, including commercialization of innovations. The methodological basis of the research is the principles of dialectical logic, which presuppose the consideration of the economy as a multifaceted category with objective and subjective characteristics, manifested in the process of its development (Galazova, 2013).

3. RESULTS

In the middle of 1980s, an attempt was made to change investment priorities within the framework of the program for accelerating social and economic development, which was considered as the basis for the economy's restructuring. First of all, the need to expand the application of scientific and technical progress was stated as a guiding principle. With this aim, the investment structure was subjected to a significant revision: it was suggested to reduce the costly capital construction and to provide larger investment in the technical upgrade of enterprises and organizations. However, despite the fact that this was managed in parallel with increasing the role of the human factor and solving the main social problems, innovation components did not work, and the system of planned national economy ceased to exist as it was inefficient and uncompetitive (Gaidar & Chubais, 2011).

The transition to the market foundations of national economic development that followed since the beginning of the 1990s also did not show a significant change in the innovation activity of economic entities of different ownership forms, although this period of Russian history is viewed in various ways. So, the highest evaluations of market reforms are given by analysts considering that, by the end of the 1990s, the mechanisms of a new market economy had already reached a high degree of maturity which allowed for an adequate response to the economic crisis of 1998. Moreover, it is noted that since 1999 and for about a decade, a sustainable economic growth has continued. The low-efficiency and loss-making industries ceased to exist under market regulation, while promising ones, on the contrary, received additional impulses for their development (Kleiner, 2017).

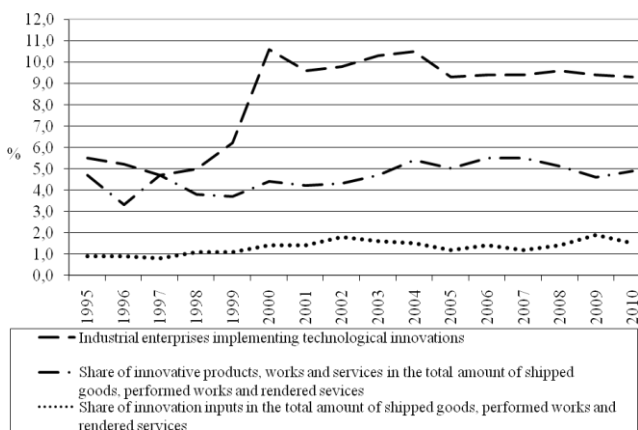


Figure 1. Innovation activity of Russian industrial enterprises between 1995 and 2010, in percent. (The chart was built based on the official data of Federal State Statistics Service) - [http://www.gks.ru/free_doc/new_site/business/nauka/grinnov1 .htm](http://www.gks.ru/free_doc/new_site/business/nauka/grinnov1.htm))

On the one hand, the graphs in Fig. 1 shows that in the post-crisis period of the late 1990s the share of enterprises promoting technological innovations almost doubled and reached about 10 percent. But on the other

hand, the share of innovative products, works and services in the total volume of goods produced was within 4-6 percent and so it remained. In the same way, the specific weight of innovations input has not changed and remained in the range of 1-2 percent. Thus, the transition to market-based mechanisms of economic development did not in any way contribute to the progress of innovation processes and their expansion in the Russian economy. The late 1990s and late 2000s post-crisis recoveries showed the innovations incompatibility with the national economic system. In this context, the new scientifically based strategies for socio-economic development highlighted the need to increase innovation of domestic production. First of all, there was an unacceptable lag behind world leading economies. When more than seventy percent of the total number of German enterprises and organizations invested in technological and non-technological innovations, there was less than ten percent of Russian economic entities that promoted innovative development. As a result, in Russia, the labor costs were much higher with significantly lower competitiveness. With such a low innovation activity, neither high quality of human capital nor the quality of higher education are uncalled and unnecessary in the reproduction processes (Grigoriev, 2017).

Consequently, the above-mentioned strategy of social and economic development suggested to increase the innovation under three scenarios. The inertial scenario reproduced previously established trends. The moderate one foresaw a consistent and incremental increase of innovation component. Third, the progressive scenario required an extended integration into global economic and innovation processes. It is obvious by now that any of the above scenarios cannot be implemented, and the innovative characteristics of Russian production are consistently

worsening. First of all, this refers to the structure of investment, in which the share of capital construction is growing, as it was in the relatively distant days of perestroika (Table 1) (Vlasov et al., 2017).

Table 1 – The structure of investment in fixed assets in the Russian Federation (at then-current prices)*

	2000	2005	2010	2011	2012	2013	2014	2015	2016
billions of rubles									
Investment in fixed assets-total	1165,2	3611,1	9152,1	11035,7	12586,1	13450,2	13902,6	13897,2	14639,8
including:									
Housing construction	132,0	434,2	1111,7	1395,6	1533,7	1681,5	2014,4	2172,8	2254,3
Buildings construction (except dwelling houses)	502,2	1460,2	3962,8	4776,8	5560,2	5382,7	5665,3	6069,1	6618,1
Machines, equipment, vehicles	426,6	1484,0	3472,7	4185,6	4731,6	5212,8	5052,0	4375,1	4480,7
other	104,4	232,7	604,9	677,7	760,6	973,2	1170,9	1280,2	1286,7
In per cent of total amount									
Investment in fixed assets-total	100	100	100	100	100	100	100	100	100,0
including:									
Housing construction	11,3	12,0	12,2	12,7	12,2	12,5	14,5	15,6	15,4
Buildings construction (except dwelling houses)	43,1	40,4	43,3	43,3	44,2	41,5	40,8	43,7	45,2
Machines, equipment, vehicles	36,6	41,1	37,9	37,9	37,6	38,8	36,3	31,5	30,6
other	9,0	6,5	6,6	6,1	6,0	7,2	8,4	9,2	8,8

*http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/investment/nonfinancial/#

So, in the period between 2000 and 2016 the share of investments in housing construction increased from 11.3 to 15.4 percent, in buildings and structures construction - from 41.3 to 45.2 percent. In the aggregate, the share of capital construction increased from 54.4 percent to 60.6

percent. At the same time, the share of investment in machinery, equipment and vehicles decreased from 36.6 to 30.6 percent. Thus, the Russian economy is consistently losing the already weakly expressed innovation-oriented structure of national reproduction. The innovative processes are most pronounced in the largest organizations (employing more than 10,000 people) partly or wholly in public ownership, especially in state corporations, and that is one of the most striking contradictions of Russian innovation activity. The same thing can be seen with the expenditure on innovation. In reality, there is a clear trend towards the state control of the innovation sphere, where the role of the corporate sector integrated with state agencies is simultaneously growing. In this case, innovation and innovative technologies do not contribute to an increase in market competitiveness (Gorodnikova et al., 2017).

In recent years we may observe the reduction of the share of organizations implementing innovative activity in the Russian Federation (Table 2) with the simultaneous increase in the share of fully worn-out fixed assets. Only in the Central and Volga Federal Districts the share of entities implementing technological innovations slightly exceeds the average level. In all other districts, the innovation indicators are lower than average, which indicates that the vast majority of Russian regions tend to lag behind. The reproductive characteristics of existing innovative development block internal reserves of the Russian economy, for example, in terms of advanced production technologies, the total number of which increased by a factor of 1.5 between 2010 and 2016. In our opinion, these trends are the result of the most acute systemic contradiction existing in the innovative development of the Russian economy (Shanin, 2012).

Table 2 – Dynamics of indicators characterizing innovation capability of Russian economy between 2010 and 2016*

	2010	2011	2012	2013	2014	2015	2016
Share of worn-out fixed assets	13,5	14,4	14,0	14,6	14,9	15,8	16,9
Including:							
buildings	3,5	3,6	3,5	3,5	3,4	3,4	3,6
constructions	13,0	13,9	13,2	14,2	14,4	15,0	16,4
Machines and equipment	21,0	22,0	21,8	22,1	23,1	24,5	26,0
Vehicles	11,3	11,7	10,5	10,3	10,7	11,9	11,8
Implementation of fixed assets in % to the previous year in comparable prices							
Implementation of fixed assets in % to the previous year in comparable prices	93,4	129,0	108,7	101,0	97,0	94,3	-
Level of fixed assets wear in %	47,1	47,9	47,7	48,2	49,4	47,7	-
Coefficient of capital assets modernization	3,7	4,6	4,8	4,6	4,3	3,9	-
Coefficient of disposal of fixed assets	0,8	0,8	0,7	0,7	0,8	0,8	-
Share of organizations implementing technological innovations							
Share of organizations implementing technological innovations	7,9	8,9	9,1	8,9	8,8	8,3	7,3
Including the federal districts:							
Central federal district	7,3	8,8	9,7	9,6	9,8	9,8	9,0
North-West federal district	7,6	9,5	9,5	9,2	8,9	8,1	7,1
South federal district	6,2	5,3	6,3	6,2	6,6	6,7	6,2
North Caucasus federal district	5,0	4,2	5,6	5,3	5,8	4,4	2,6
Volga federal district	10,2	11,2	10,8	10,4	10,4	9,5	8,4
Ural federal district	9,6	9,8	9,0	8,0	7,1	6,7	6,5
Siberian federal district	6,8	7,6	7,7	8,2	7,9	7,2	6,0
Far-Eastern federal district	7,0	9,6	9,6	8,3	7,9	6,5	5,7
Advanced production technologies (units)							
Advanced production technologies (units)	864	1138	1323	1429	1409	1398	-

* The table was compiled by the author according to the data of Russian Statistical Yearbook. 2016: Statistical book /Rosstat.- M., 2016.- C. 288, 515-517; Official statistics / Entrepreneurship // Federal State Statistics Service.

URL:http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/

Therefore, taking into account the fact that planned, market and state/corporate attempts to increase innovation activity of Russian economy have failed, it is necessary to seek for new organizational and

managerial forms that will address the challenges of modern transformation processes (Tucker et al., 2009).

4. DISCUSSION

In the search of an adequate strategy, it is necessary to take into account the most systemic requirements of economic science. First, the founder of the theory of innovative development, J. Schumpeter considered innovations as integrally linked with entrepreneurship and permanent evolution of socio-economic systems. The system dynamics of these components is based primarily on the motivated dissemination of innovations able to change existing production patterns. Hence, entrepreneurship seems to be a meaningful deviation from the common reproduction process, when innovation becomes a fundamental characteristic. Therefore, the modern conditions of reproduction require a system integration of entrepreneurship and innovation. Secondly, the innovative development of the Russian economy should be seen in the context of global processes. In particular, it must be recognized that the processes of socio-economic transformation in Russia are an integral part of the world economy. Innovative processes by their nature always fall outside national economies (Schumpeter, 2007).

Thirdly, the critical component is the greater functional role of partly independent socio-economic subsystems, so-called individual economies, with the enhanced balance of the economy as a whole and a new greater level of its participants' coordination. This is the only way to ensure the transition of the national economy to a new phase of socio-

economic development, driven by the development of the digital economy. Fourth, in the modern context, the development of a market economy focused on innovations requires not only an active government participation through the financing of investments, but also the creation of a wide range of institutional measures to ensure the full support to innovative processes. Fifthly, it is necessary to take into account that the sixth technological revolution requires the convergence of technologies. In this context, the most difficult organizational task is to develop the principles and mechanisms for managing large-scale complex systems with humanitarian priorities. At the same time, it becomes necessary to form new economic relations corresponding to the challenges of the knowledge economy. In addition, the reform of public sector will require a new budgetary policy, especially as to investment it is also necessary to take into account regional differences in innovation development, for example, in investment policies.

5. CONCLUSIONS

In our opinion, the integration of all the requirements is possible only within the framework of conceptualization and effective implementation of a national innovative digital platform. All the participants of the innovation processes will thus operate in a single financial, legal and information space. This multi-component platform with a high level of public regulation can maximize the benefits of market relations and become an effective organizational tool to overcome the contradictions of Russian innovation development.

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