

**Natalia Ketova**  
**Victor Ovcinnikov**

## **TRANSITION TO INNOVATIVE MODEL OF DEVELOPMENT OF RUSSIAN ECONOMY IN THE PROCESS OF ITS MODERNISATION**

***Abstract:** The article presents the basic imperatives – indicators of innovative models of development of the Russian economy in the long term outlook and reflects the directions and priorities for the modernisation required by these indicators by the year 2020. The institutional and economic conditions accelerating the technological modernisation of basic sectors in the Russian economy are identified on the basis of the Federal goal-oriented programme. This programme reflects the opportunities of country's economy opportunities for transition to the innovation model for the development of pharmaceutical and medical industries.*

***Keywords:** innovation, modernization, the innovative model of development, competitiveness, energy-savings strategies, the high medical technologies, innovative pharmaceuticals.*

**JEL:** O 31

### **Introduction**

Development of the Russian economy within the limits of the model of innovative type can only be achieved via its modernization. In spite of distinctions in the structure, priorities, resource security, developed infrastructure, and the other attributes when comparing Russia and European countries, including Slovakia, the modern world economy is primarily subject to the general laws of development. One of the manifestations of their effect is a permanent modernisation.

General institutional sets, uniform rules of game of the world financial and economical system unify norms and models of behavior of the “national players”.

## 1 Innovation model of development of the Russian economy: priorities and appraisal

In Russia the innovative model of economy is characteristic of the following imperatives – indicators:

1) A high share of the innovation-active companies operating in the market (not less than 35%, including global innovators – not less than 10%, innovators, producing goods and services for internal market – not less than 20%).

2) An annual increase in the number of innovation-active companies by 2-3%.

3) A stable rise in the innovative goods' volumes produced by Russian companies; its share rise in the priority industries, spheres and complexes of the economy to 40 %, in the company-exporters – to 50% in 2020.

4) Accelerated development of the research, implementing and the training centres on the world level, utilising their potential for the organisation of research and development, commercialisation of innovations, and improvement of staff competences.

The specific directions and imperatives of the Russian economy's development were developed and specified in the letter of the Russian President to the Federal Assembly of the Russian Federation. In this message an important place was given to modernization of the Russian economy the priorities of which are reflected in Table 1.

Table 1.

**Priorities of Russia's Economy Modernisation and Technology Development**

<b>Priorities for Modernisation</b>	<b>Characteristic directions of modernisation</b>
1. Introduction of the newest medical technologies, production of domestic medicaments	Development of medical supplies, technologies and pharmaceuticals. Active adjustment of the medicines' turnover and their prices. Supplying the population with high quality medicines (production of more than 50 medicines for cardiovascular and oncological diseases in Russia), and also new technologies for prophylaxis and treatment of the diseases. In 2015 the domestic production share in the medicines' market is to constitute not less than 25%, in 2020 – more than half of all the medicines.
2. Increase in power efficiency, implementation of energy-savings strategy	Transition to the rational consumption model of power resources, implementation of programmes of production and installation of the accounting devices, using of the energy-savings lamps, modernisation of communal networks, and etc.
3. Development and introduction of the novational power technologies	The introduction of innovations in the traditional and alternative energy sectors, using bio-resources for obtaining energy carriers. Expansion of the use of superconductivity technologies in the spheres of production, transfer and using electric power. Implementation of development programmes for nuclear power, construction of new generation reactors, organisation of nuclear fuel production supported with novational technologies by the year 2014.

4. Development of space technologies and telecommunications	Utilisation of space technologies for the implementation of programmes for getting broadband access to the Internet, transition to the digital television and fourth generation mobile communications. Lining of high-speed optical highways, using of GLONASS system for getting modern navigating equipment, increase in safety of transport and technically difficult objects. In 2015 emergence of the world indicators of the Russian communication satellites' orbit existence
5. Expansion of information technology' realisation sphere	Potential involvement of supercomputers and computer systems, and relevant software. Digitisation of design technologies and creation of planes, space vehicles, cars, nuclear installations, etc. Grant expansion of various services through electronic communication channels, introduction of electronic government system

The resulting priorities testify that the effective purpose of the Russian economy's modernisation is a re-orientation to the requirements of the country's population. They are connected, according to conceptual installations of the Russian Government, with the provision of health improvement, increase in power resources and information availability.

The given priorities are of key importance for Russia to raise onto a new level of technology, for the country's transition to the innovation model of development, as well as for getting leader positions in the world as underlined in the Russian President's letter.

## 2 The Importance of Russian Economy's Modernization in the Modern Conditions

Fulfilment of the Russian economy's modernisation priorities, in context of globalisation imperatives, is to provide the solution to some strategically important tasks, namely:

- 1) Transition to the innovatively-industrial type of development;
- 2) Strengthening of the social-market nature of the national economy by means of introducing the most recent medical technologies, providing the population with high quality medicines made in Russia (in 2020—more than half of all the medicines), improvements of telecommunications quality, provision of broadband access to the Internet, etc.;
- 3) Effective participation in the international specialisation of labour system and cross-border intercountry exchange of commodities, capitals, technologies, labour power, energy-raw resources, and information-software solutions; construction of the rational-opened model of the national macroeconomy'; achieving an adequate level of competitiveness on internal and foreign markets.

Accordingly, modernisation of the Russian economy in essence has transition to the innovative model providing effective market-regulated development on the

system transformations basis of economic way developed in Russia to beginning of the 21st century.

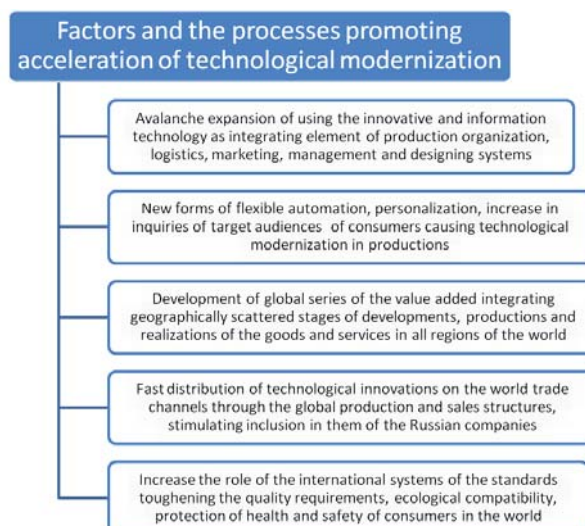
Processes of modernization of the Russian economy evolving in the direction of innovative model development, should continue subject to new hierarchy of the growth-formative production factors. Indeed, in the first decade of the 21st century, there was “an epoch-making” change in leadership when the financial capital dominating for some centuries during the formation and development of industrial society has given way to such evolutionary factors as knowledge, competence, creative communications, and other intangible assets having more and more significant influence on all spheres of the societal activity and as key sources of competitive advantages.

In this regard, novational projects in educational and science spheres, innovative developments providing real modernisation not only in production, but in professional training systems are deserved the special attention: target programmes of practical development and realization of production, information and administrative technologies, on the formation of the multi-stage education system, including preparation of business elite and highly competent researchers (the way it, for example, this takes place in the newly-built innovation centre in Skolkovo), on the creation of dynamical information infrastructure and creative communications.

Motives and stimuli leading to technological modernisation have changed. Factors, the economic and technical-technological innovations predetermining acceleration of this modernisation are reflected in Figure 1. Undoubtedly, they operate in the economy of various countries, which differ in terms of the speed of implementation of innovations, in their focus laid on industries and spheres, territorial localisation, etc.

Figure 1.

**Complex of Factors, Processes, New Products and Technologies Leading to Accelerated Technological Modernisation of Productions in the Russian Real Sector**



The resulting imperatives stimulating factors of technological modernization reflect an increasing strength of the qualitatively new nature of factors in the economy: information technology, the Internet – networks, diversified communications, etc.; this phenomenon reflects the increase in the knowledge power, scientific developments, increase in the importance of intellectual assets. The innovation economy can exist only under conditions when knowledge is its integral part.

### **3 Forming of Innovation Model of the Russian Economy in the Framework of “Knowledge-based Economy”: Prospects and Complexities**

Innovations as the modified combination of production and intellectual resources, open the way to new goods and services, production methods, sources of raw materials and technologies. In turn, new products and technologies lead to the rise of new markets and their development under the conditions of modernization, while the intellectual property acts as the subject of the diversified transactions and relations. In a competitive environment, the one who understands essence and applied value of innovations better, creates and uses more suitable conditions for them, increases the competence and uses the new knowledge becomes the winner. This kind of victory results in strengthening of such approach to progress when the focus is on the increase in the efficiency of resources, in particular the intellectual resources.

However, this approach could not become dominating by itself; instead, in order to be verified in practice, common efforts of the interested business communities, the governments, the state management structures for forming and realisation of the innovation model of the economy development are needed.

It is necessary to underline that its understanding by a certain part of heads of the enterprises from the Russian real sector stimulates their activity in the implementation of innovation projects.

According to the interdepartmental analytical centre (IAC) despite an adverse effect of the world financial crisis 2009 more than 10% of the domestic companies have increased expenses on innovations.

From the point of view of the increase in the share of an innovation component in produced goods and the technologies used presented in Table 2 the structure of the Russian enterprises allows to draw a number of conclusions.

1) In spite of the fact that from 31 to 60% of the enterprises (by kinds of industries) remain absolutely innovation passive, their number was reduced during the last years. In 2000 their number was about 70% (those in the industries connected with mobile communication, production of the electronic and optical equipment were only 20-30%).

2) The enterprises–innovators that are really recognised as innovative in global markets, account for only 3-9 %. There are no wood-processing enterprises of this type in Russia, and as for enterprises in textile and sewing production the share is

a minimum (1.1%). It testifies, undoubtedly, about the necessity of making serious efforts to gain leadership in leading industries and economy spheres. Because Russia's position in the world is meanwhile very weak in this respect.

Table 2.

**Distribution of the Russian Enterprises of Real sector on the Groups Subject to Novelty and Originality of Their Innovative Developments, 2009**

Production	Global innovators, %	Innovators for internal market, %	Innovators only for own enterprise, %	Simulators, %	Absolutely passive, %
Food production	1.3	11.5	3.0	37.9	46.4
Textile and clothing manufacture	1.1	10.1	6.37	36.0	46.1
Wood processing	0.0	4.9	3.7	30.9	60.5
Chemical production	9.1	19.3	18.2	21.6	31.8
Metallurgical industry	3.1	18.4	7.1	29.6	41.8
Production electronic and optical equipment	6.0	32.5	10.3	17.9	33.3
Production of vehicles and the equipment	3.5	29.1	5.8	15.1	46.5
Machinery and equipment production	2.5	27.6	9.8	20.9	39.3
Average on all productions	3.0	19.1	7.5	27.4	43.9

3) Some Russian enterprises implement innovations for the improvement of their own technologies (5-18%), or trust in the innovative goods or technical innovations on the domestic market (up to 30 % of the enterprises).

On the whole, prospects for Russia's expansion of innovations with its extensive experience in industrialisation and modernisation in the 20th century have to be assessed as good.

#### **4 Realization of the Innovation Model of Development the Pharmaceutical and medical industries in Russia**

One of the directions of the Russian economy modernisation is the creation of the innovation model of development of the pharmaceutical and medical industries. Its real outlines are reflected in the Federal Target Programme “Development of the Pharmaceutical and Medical Industries of the Russian Federation for the Period till 2020”.

The aim of the programme – provision of the complex approach to the decision of the priorities facing the domestic pharmaceutical and medical industries, its transition to innovative model of development by means of effective organisational and financial tools, stimulation of the private-state partnership, and coordination of the investment and innovative-technological projects.

The focus of the Programme tasks are:

- To release the strategically industry drugs, vital and essential drugs and also medical device and medical products by the domestic pharmaceutical and medical industries so that they substitute imports of these products and equipment.
- To bring to the market innovative products produced by domestic pharmaceutical and medical industries.
- To increase the export potential of the domestic pharmaceutical and medical industries to eight-times compared to the base year 2010.
- To develop a highly competent staff for the domestic pharmaceutical and medical industries.

According to forecasts, the implementation of the activities by the Programme will enable to provide achievement of the following results by the year 2020:

- Production in the framework of the drugs will amount to 765 billion roubles.
- Proportion of drugs produced in Russia in terms of money will amount to 50 percent of all drugs sold.
- Proportion of medical equipment produced in Russia in terms of money will be increased to 45 per cent of all ongoing medical products and medical equipment.
- Production within the limits of the Programme of medical products, including those created by commercialising advanced technologies, is estimated at 200 billion roubles;
- The volumes of the export of pharmaceutical goods will amount to 90 billion roubles, and medical products – 40 billion roubles.
- Technological conversion of 75 enterprises of pharmaceutical industry and 85 enterprises of the medical industry will be conducted.
- It is planned to generate 10 research centres of the world level for development of medications, including in the emerging profile innovative clusters, and also 7 research centres of the world level to develop medical equipment.
- Number of the specialists trained and retrained within a cluster will exceed 5 thousand persons.

**Funding of the Programme within the limits of the innovative variant offered for realization.**

Resource support from means of the federal budget and co-funded by means of extra-budgetary sources provides:

The limit (forecast) volume of funding the Programme in 2011-2020 years will amount to 188 billion rbl. Including:

- means of the federal budget: 125 billion rbl.;
- means of extra-budgetary sources – 63 billion rbl.

Expenses on research and development works funded from the federal budget amount to 96 billion rbl., i. e. 77%.

A scientifically justified and well-tested Federal programme for the development of pharmaceutical and medical industries reflects not only the wide prospects for Russia in this area, but also the availability of objective prerequisites for the transition to the innovative economy.

In the process of economy modernisation, the state plays the role of the catalyst of private investments in of research and development activities in the real sector, encourages the development of entrepreneurship in scientific and technical sphere, creates for it economic benefits within the limits of the state education system, and provides the professional training for scientists and highly skilled workers.

As shown by the experience of the countries with innovative economy the institutional tools of purposeful activity for modernization are the generated «the centres of excellence», “poles of competitiveness”, rather effectively acting techno parks, nanocentres, innovation zones, etc.

Thus, following **conclusions** are legitimate:

1) Modernisation of the Russian economy requires an essential review of purposes, mechanisms and the rules concerning the resource allocation, attracting investment and using the creative potential of staff. This also applies to motivating and providing incentives to improve staff competence, increasing the intellectual capacity, the actual implementation of innovation. Hence – the urgent tasks of improving the quality and enhancing the level of stability of the institutional environment, of institutes for the human capital development, coordination and distribution of risks.

2) The process of economic modernisation during which the transition to innovative model of development is provided, is represented as a permanent and rather multidimensional one; it corresponds to the effectiveness of transformation change in the country as a whole, and is characteristic of a number of determining factors (availability of the supportive institutional environment, the investment attractiveness of the objects which are subject to modernisation, etc.).

3) Nowadays, modernization stimulates the development of the Russian economy within the limits of innovative model as the most functional perspective and significant. It is performed under the conditions of the knowledge-based economy. The priority of such economy is based on constantly updated information, Internet technologies, creative integrated communications, and most importantly – increasing



employee competences.

4) The process of modernisation of the Russian economy assumes an essential update of purposes, mechanisms and the rules concerning resource allocation, investment attraction and using a creative potential of staff. It also involves developing a system of motivation and stimuli for learning and real introduction of innovations. It is obvious that decisions will have to be made on tasks related to enhancement of quality and increase in the level of stability of the institutional environment, institutes of human capital development, and coordination and distribution of risks. The system of the rules and regulations adopted in the society for the operation of the economy should be focused on priority use of intellectual resources and creation of an efficient model of innovation development.

**Sources:**

- [1] A Special Report on Business and Climate Change. In: *Economist*. June 2, 2007.
- [2] AMIN, A. – COHENDET, P.: *Architectures of Knowledge. Firms, Capabilities and Communities*. Oxford, 2003.
- [3] GAPONENKO, A. – ORLOVA, T.: *Knowledge management: how to turn knowledge to capital*. Moscow: EKSMO, 2008. ISBN 978 – 5-42-976049-6.
- [4] GLAZIEV, S.: *Development of the Russian economy in the context of global technological developments*. Scientific report – Moscow: ZEMI RAS, 2007. ISBN 978 – 5-16-405214-5.
- [5] MILNER, B.: *Innovation development: economy, intellectual capital, knowledge management*. Moscow: INFRA-M, 2009. ISBN 978 – 5-16-003649-6.
- [6] The concept of the Federal Target Programme «Development of Pharmaceutical and Medical Industries for the Period up to 2020». In: *The Russian business newspaper*. 2010. - a 39 (772) //www.rg.ru
- [7] MEDVEDEV, D.: Priorities for the modernization. Message from the President of the Federal Assembly of Russia. In: *The Russian newspaper*. 2009. – N 214 (5028) // www.rg.ru
- [8] NOVIZKY, N.: *Innovative Russian economy: theoretical and methodological foundations and strategic priorities*. Moscow. Book's House "LIBROKOM", 2009. ISBN 978 – 5-397-00092-5.
- [9] KHLOPONIN, A.: Discussions on the modernization of the country's economy. In: *The Russian newspaper*, 2010. No. 30 (5109) // www.rg.ru