

docent Irina I. Kolesnikova

Belarus state economic university
Minsk, Republic of Belarus

The problems of development of national innovation system

INTRODUCTION

In order of the theory of evolutionary systems and development in cycles the ensuring of country's stability achieves by periodically modify of system of the government. The world financial-economy crisis is the final stage of the recurrent global cycle. It is possible, that the rate of the world innovation development will be increased in condition of world crisis. So it is necessary to move on to another stage of economic development. The necessary of innovation development has been recognized in all spheres of economy in our country. But practically the rate of innovation development is slow. It is connected with internal and external causes.

There is an urgent need for the translation of the Republic of Belarus on the innovative path of development and building an innovative economy. In the program of socio-economic development of the Republic of Belarus adopted a policy to create a modern country-term national innovation system of market-type, which is one of the priorities of socio-economic development in the near future.

To create the National Innovation System (NIS) is a large-scale technological renovation of production based on advanced scientific and technological developments, development of competitive national R & D sector, which provides a transition economy on an innovative path of development, the formation of enterprises' model of innovative behavior, support the creation and dissemination of innovations in all sectors of the economy. This will improve the economic security of the country. In this case, only the integrated development of the NIS as a system rather than its individual elements, can ensure the growth of GDP mainly due to innovative development.

The development of concepts related to NIS c different directions: the study of economic science and technological progress, the formation of new methodological approaches to the problems of knowledge as an economic resource. Among the most prestigious foreign scientists whose work formed the basis of the modern concept of national innovation systems – Joseph Schumpeter, Friedrich Hayek, D. North, R. Solow, P. Romer, C. Freeman.

Among the methodological principles of the concept of NIS are the following:

- Schumpeter's idea [7] on the competition through innovation and research in corporations as the main factors of economic dynamics;
- analysis of the institutional context of innovation as a factor directly affecting the content and structure;
- recognition of the costs on the information that leads to an understanding of transaction costs, which consist of cost estimates of useful properties of the object and sharing of costs and ensure the rights of [2];
- recognition of the special role of knowledge in economic development.

Objective: to study the concept of the innovation system of the Republic of Belarus in terms of systematic and evolutionary estimation of the level of its development and define areas of reform.

Methods: systematic and evolution, the logical method of analysis and synthesis, comparison method, etc.

Results: It revealed the concept of innovation system and determined its value to the economy, an analysis of indicators of innovation activity, studied the dynamics and structure of innovation expenditure, allowing to determine the orientation of the innovation strategy of organizations identified promising areas of the Republic of Belarus on the transfer of innovative development and construction of innovative economy.

THE EVOLUTIONARY APPROACH TO THE CREATION OF THE NATIONAL INNOVATION SYSTEM

Social systems peculiar spiral type of development due to the uncertainty (change in uneven) distribution of matter and energy in space. Thus, the NIS is also being developed spiral. The innovative system is aimed at creating an upward spiral of technological progress, formed by a sequence of cycles, "the study – the production, leading to an increase in efficiency and product quality. The spiral of progress based on self-organization, training and enterprise adaptation in a changing environment. Every organization are a system, each element has its own specific and limited objectives in a changing environment.

To address the complex development of the innovation system it is advisable to approach from the viewpoint of systematic and evolutionary approaches.

In this case, a business entity is considered from the standpoint of systematic and evolutionary should be considered:

- 1) socio-economic system, with its specific goals and objectives;
- 2) open system, which is necessary for life, not only internal but also external environment;

- 3) communicative system are not isolated, but associated with other lower-and higher-order, the economic mechanism of which – an element of higher-order system;
- 4) integrated system consisting of parts that have specific properties, whose union is not identified with a simple mechanical sum of its constituent elements, and is characterized by the appearance of qualitatively new properties (the property of emergent system);
- 5) hierarchical system, integrity and communication skills which is inherent to each level of the hierarchy;
- 6) a complete system, consisting of elements and subsystems, which are formed both formally and informally;
- 7) multi-purpose system, at different stages of development which is possible different priority objectives;
- 8) an integrated system, which is formed in the process of flexible incentives for quality and high performance at all levels in finding of system's factors, the integration of various functions, ensure achievement of objectives;
- 9) the elastic system is subject to the law of requisite variety, capable of taking risks, keeping the new features, solution to the problem involves the necessity of choosing from a variety of possible solutions;
- 10) a system of flexible, adapting to various changes, self-regulating, capable of timely reconfigure its internal organization;
- 11) a dynamic, self-developing system, which requires research in-house processes.

The Concept of National Innovation System of the Republic of Belarus identified the following problems of innovative development:

- lack of systematic, well-structured legal framework for the implementation of all stages of innovation, as well as measures of state support, including direct (government funding) and indirect (tax incentives, government guarantees, etc.) mechanisms, as well as legal framework governing the conditions of establishment and the norms of relations between subjects of innovation infrastructure;
- limited effective demand in the domestic market and advanced technologies and innovations, the availability of low demand from the real economy on the perspective from the standpoint of commercial applications, the results of scientific and technological activities, the absence of prevailing market innovative products;
- lack of development of special financial mechanisms to support the individual elements of the innovation infrastructure, innovation and entrepreneurship and self-innovation projects, namely the funds of venture financing (venture capital), special financial mechanisms to support companies during their rapid growth, the firms of chartered surveyors and the intellectual property – uniqueness, innovative investment insurance, leasing highly technological equipment and devices, the stock market for high-tech companies, trading houses, etc.;

- lack of effective mechanisms for implementation of certain government priorities in the development of science and technology, the plurality of scientific organizations that claim to correspond of government support the consequence of this is sputter of budgetary funds and underinvestment in research (knowledge development) in the promising areas of science, provide, including, competitiveness economy in the world market;
- the weakness of cooperative ties between research organizations, educational institutions and production enterprises;
- lack of development of modern forms of innovation management and commercialization of innovations (through market research and technical products);
- low level of innovation activity leading industrial enterprises of the republic before.
- the major economic factors that constrain innovative activity of businesses in the sector economy are low innovative capacity, a shortage of funds for the expansion of this activity, high cost of innovation, economic risks and long payback periods;
- low information transparency of innovation sphere, first of all, lack of information about new technologies and market opportunities principally new (innovative) product, as well as information for private investors and lending institutions about the objects of capital investments with potentially high returns;
- low level of innovation culture of the population and entrepreneurs, as expressed in a weak perception of Innovation and weak guidance on innovation.

These barriers and problems of innovative development in the aggregate determine the major systemic problem: the pace of development, structure and technological level of research and scientific areas of the country does not meet the needs of the national economy, elevated its competitiveness. Some of the problems are a major constraint to the development of innovative entrepreneurship and require urgent action to address them.

The microfactors exercise influence on innovation activity of enterprises:

- 1) the quality of the innovation strategy of enterprises;
- 2) the level of enterprise' innovation potential development (increase of potential, stability of financial position...);
- 3) the identical of organizational culture of enterprises to forms and methods of management;
- 4) the flexibility of organizational structure of enterprises;
- 5) the degree of innovation activity that corresponds to condition of internal and external environment of enterprises.

The macrofactors of innovation activity include:

- 1) the level of scientific and technical production's market development;
- 2) the favorable investment climate;
- 3) the level of development of innovation infrastructure (existence of organization to support of the innovation enterprises at the first stage of development);

- 4) the use of the world information net;
- 5) the efficient of innovation strategy and other.

Competitive and attractive for investments can only be a venture corporation, a country that consistently implement cycles of “research-production” that form a continuous spiral of technological progress. To recreate the native helices progress requires the establishment of a national innovation system, which requires:

- increase the demand for innovation on the part of most industries, as at present, innovation activity is concentrated in a narrow number of sectors, and the technological renovation of production relies mainly on the import of technology rather than on domestic developments;
- increase the efficiency of generation sector knowledge (basic and applied science), since there is a gradual loss created in the previous years backlog, aging workforce, declining research, weak integration into the global science and innovation market;
- to overcome the fragmentation of the innovation infrastructure, as existing its elements do not support the innovation process throughout the entire process of creation, commercialization and innovation;
- complement existing and developing new laws and regulations on scientific, technical and innovation activities, the state innovation policy to reflect these fundamental issues in the construction and functioning of NIS;
- creation of a system of legislative base for the formation of technological and economic environment conducive to innovation development, development of market institutions and mechanisms for innovation, market research and technical products;
- definition of legal norms regulating the use of resources, systems of scientific and technical information for information support of innovation, including the exchange of knowledge and technology between the defense industry and civil sectors of the economy;
- finalization of the legal mechanism and the establishment of a multilevel system of protection, use and protection of intellectual activity;
- legal support for the development and implementation of tax, customs, tariff, pricing and depreciation policies aimed at promoting the commercialization and introduction of new technologies;
- creation of institutional and legal environment for venture businesses in the area of high technology innovation projects.

THE DEVELOPMENT OF THE INNOVATION ACTIVITY OF BELARUS REGIONS

Depending on the purpose of recording and analysis of two approaches to measuring the cost of innovation: the calculation of the cost of innovation, either implemented in the enterprise (industry, region, country) during the year

(including pending) or embedded within a year (including the costs of past years, but excluding the cost of unfinished innovation). Statistical monitoring is usually based on the first of these options.

For a wide range of analytical problems in the statistics used by various factions expenditure on technological innovation, based on which it is possible to draw conclusions about the structure and sources of funding innovation, existing proportions between its separate species, target oriented innovation strategy of enterprises.

Indicators, characterizing the efficiency of innovation activity in Belarus and regions, show in table 1. Table shows, the data characterizing the innovation activity in this country during the last nine years. The Table shows that number of research institutions have been growing in regions of Belarus, particularly in Minsk. It is considerate the state property don't stimulate to introduce the innovation to make profit. However such enterprises have been protect in political and social-economic instability. So it has been plan the long-term development purposes which may be realized by innovation activities. This organizations has more potential of scientific researchers.

Table 1. Indicators of innovation activity in Belarus and regions

Indicators	Years			
	1998	2003	2007	2009 ¹⁾
<i>I</i>	2	3	4	5
1. Number of research institutions in Belarus	272	295	340	446
1.1. in sector of economy:				
– state	83	122	131	80
– owner's	137	122	146	255
– higher education	52	51	63	43
1.2. in Region:				
– Brest Region	13	16	21	26
– Vitebsk Region	24	26	29	28
– Gomel Region	27	27	27	32
– Grodno Region	12	11	15	17
– Minsk City	164	184	208	302
– Minsk Region	17	15	26	22
– Mogilev Region	15	16	14	19
2. Number of total research (R&D) personnel in Belarus, thous. pers.	32477	29981	31294	33516
3. Specific gravity of researchers in total research (R&D) personnel in Belarus, %	59,0	59,0	60,7	61,4
– Brest Region	56,2	54,4	67,2	66,3
– Vitebsk Region	44,1	53,8	58,6	65,8
– Gomel Region	46,3	48,8	49,1	51,5
– Grodno Region	49,8	55,5	64,7	69,0
– Minsk City	63,5	62,0	63,3	62,8
– Minsk Region	47,6	47,6	45,3	56,7
– Mogilev Region	49,7	48,9	58,6	54,0

<i>1</i>	2	3	4	5
4. Average personnel of one research institutions in Belarus, pers.	119	102	92	75
– Brest Region	37	24	25	23
– Vitebsk Region	67	39	43	38
– Gomel Region	116	111	110	96
– Grodno Region	49	43	31	34
– Minsk City	143	123	113	83
– Minsk Region	152	125	73	124
– Mogilev Region	47	36	45	30

¹⁾ Include the small enterprises.

Information: [4].

Number of research institution has been change during the last eleven years in 3 sectors of economy: owner's sector (grows from 137 to 255 organizations), state sector (reduce from 83 to 131 organizations), and higher education sector (reduce from 52 to 43 organizations).

Number of total research (R&D) personnel has been increasing in Belarus in 2009 compared with 1998, 2003 and 2007 years. Specific gravity of researchers in total research personnel has been growing in the Republic of Belarus and in all regions, excepting Minsk. The higher level of indicator has been in Grodno, Brest and Vitebsk Region compared with other. This growth characterizes the increase of personnel's quality in research institutions in republic.

In 2009 year number of researchers is distributed by field of science: engineering (61,5%), natural (18,5%), social (7,5%), agricultural (5,9%), medical (4,7%) and other. The level of the engineering grows (54,4%) compared with 2000. The level of the engineering in all regions of Belarus also is higher: Mogilev (78%), Vitebsk (77,8%), Gomel (74,7%), Grodno (72,5%). It is explained, that other fields of science has developed a weak deal.

Knowledge of the world demonstrates a high innovation activity is typical for large-scale organizations (staff more than 2 thous. pers.). Such enterprises have been use current assets to realized technological innovations. At the same time medium-scale organizations have grate possibilities to introduce the innovations. Small organizations may minimize the expenditures, regulate the staff, has achieved the optimum of output.

Average personnel of one research institutions in Belarus reduce from 119 to 75 peoples. Minsk and Gomel Region have the most numerous personnel. Brest, Mogilev and Grodno Regions have the least personnel in one research institutions. In 2009 this indicator has level lower compared with 1998 and 2007 year. It is explained that small enterprises is included in number of research institution now.

Structure of research institutions has been change. Specific gravity of scientific research institutes, industrial organizations and other (small is among those organizations) have been growing compared with other organizations. The level of specific gravity of designers' office has been reduced during the last eleven years. It is connected with the reorganization of enterprises.

Directive of President of the Republic of Belarus N4 [1] facilitate development of small enterprises, it is facilitate evolution of innovation activity.

Modern tendencies of globalization of national economies lead to recent of intensification of the processes of penetration of high-tech products into the NIS home markets. Hence, evolution of entrepreneurship innovation is a top-priority trend of socio-economic progress. The entrepreneurship evolution in the Republic of Belarus has been strongly influenced by the support of innovation activity of the infrastructure of its subjects. Therefore, it can be concluded that investigation of the problems of information support of the innovation activity is extremely essential in order to promote the competitiveness of the national economy. To solve the confronting problem it is necessary to create the infrastructure in the region that would facilitate promotion of the information of technologies among the economic subjects and that would be capable to finance and encourage business education of new emerging innovative enterprises.

One of the most essential factors of progress of innovation activity of economic subjects is the availability of the innovation infrastructure in the Republic of Belarus within the national innovation system that would represent an entity of legal, structural and functional components ensuring progress of the innovation activity in the Republic.

The innovation infrastructure as the most essential segment of the modern National Innovation System in the Republic of Belarus has been actively progressing in recent years. The functioning innovation infrastructure subjects contribute considerably into the country's economic progress. It is noteworthy that growth of the number of innovation infrastructure subjects will lead to the relevant growth of the number of innovation-minded enterprises in this country. Virtual technologies keep penetrating into man's everyday life. Small business and private businessmen fail to use fully the opportunities offered by the worldwide web. Hence, it is reasonable to establish the mechanisms that stimulate progress of small business by utilizing the worldwide web information resources.

Small innovation businesses should also play a specific role in the development of innovation entrepreneurship in Belarus because this country possesses a powerful potential to encourage small businesses in the sphere of innovations. However, lack of databases of scientific and technological needs and developments and inability of individual managers to restructure their businesses independently hinder adoption of innovations.

INNOVATION COSTS AS A FACTOR IN THE DEVELOPMENT OF INNOVATIVE

Depending on the purpose of recording and analysis of two approaches to measuring the cost of innovation: the calculation of the cost of innovation, either implemented in the enterprise (industry, region, country) during the year (including pending) or embedded within a year (including the costs of past years, but excluding the cost of unfinished innovation). Statistical monitoring is usually based on the first of these options.

For a wide range of analytical problems in the statistics used by various factions expenditure on technological innovation, based on which it is possible to draw conclusions about the structure and sources of funding innovation, existing proportions between its separate species, target oriented innovation strategy of enterprises.

Depending on the type of innovation are distinguished:

- the costs of research and development associated with the introduction of new products and processes;
- costs of acquiring the rights to patents, licenses to use inventions, industrial designs, utility models (patent licenses);
- acquisition cost off-patent licenses (know-how, technology and other scientific and technical achievements that are not protected titles of) a third-party companies, organizations and individuals;
- costs of acquiring the software associated with the implementation of innovations;
- the cost of production design work associated with process equipment, organization of production and the initial stage of registration of new products (in this case they should be distinguished from the design work are accounted for as research and development, and related to the formation of the concept of creating new products or processes);
- the costs of technological preparation of production, trial production and testing associated with the introduction of technological innovations;
- the costs of training and retraining of personnel in connection with the introduction of technological innovations (the work on new technologies and new equipment);
- the cost of marketing research to produce new products to market, including the sounding of the market, adapting the product to different markets, advertising (excluding the costs of establishing distribution networks, product innovation);
- capital investment in the acquisition of machinery and equipment and other fixed assets associated with the introduction of technological innovations;
- other costs (to pay for technological services and consultations involving experts and others).

According to D. North and J. Wallis [2], transaction costs appear not only in the interaction of individual buyers and sellers, but also as a result of intra-firm relations, the relations connected with protection of property rights, and as a

result of the provision of transaction services firms, brokers, that at the level of the economy as a whole can be considered as part of transaction costs. Therefore, the branches that provide transaction services, the researchers attributed finance and real estate, banking and insurance, legal (legal) services, as well as wholesale and retail trade (excluding transportation). In the magnitude of transaction costs also include the costs of the bodies involved in the protection of property rights.

The ability to overcome the barriers of penetration of small businesses into the market is governed by the ability of the economic subject to arrange and support relations with all counterparts in the external and internal environment in addition to management of costs of production of goods and services and to bear the transaction overheads of such relation.

The transaction overheads include following components:

- the information search cost (the cost of searching the information about the market situation and losses from incomplete information);
- the cost of conducting negotiations and transaction conclusion (including the cost of legal and illegal formulation of the transactions);
- the cost of assessment (the cost needed to assess the quality of goods and services subject of the transaction);
- the cost of specifications and protection of property rights (reimbursement of the services of a lawyer and an arbiter for ensuring safety, the losses due to improper specifications);
- the cost of opportunistic behavior (the cost of supervision of observance of the transaction terms and prevention of their violation).

The optimal structure of innovation expenditures is one of the factors influencing the innovative activity of businesses. She is one of the input vectors of innovation strategy.

Table 2. The cost structure of the organization of industrial production for technological innovation by type of innovation in 2010, %

The regions of Belarus	The cost's structure		
	The costs of research and development	The costs of the acquisition of machinery and equipment	The cost of production design
Belarus	21,4	65,1	9,3
Regions:			
– Brest Region	2,4	86,0	11,4
– Vitebsk Region	5,6	60,6	16,0
– Gomel Region	29,9	64,4	5,0
– Grodno Region	37,3	52,9	3,6
– Minsk City	27,6	61,0	10,0
– Minsk Region	22,3	53,6	15,8
– Mogilev Region	6,4	74,7	16,8

Information: [5].

The most common type of innovative cost of Belarusian enterprises (tabl. 2) are [5] the costs of the acquisition of machinery and equipment (65,1% of total expenditure on technological innovation in 2010), the second position is taken by the costs of research and development (21,4%) for third place – the cost of production design (9,3%). At the same time to acquire new technology consumes only 0,4% of total expenditure on innovation. The lowest proportion of total innovation expenditures accounted for education and training (0,1%), as well as market research (0,2%). A promising direction is to facilitate the provision of equipment to small businesses in the financial leasing, which will greatly facilitate access to modern technology and equipment.

In terms of innovation acquisition of machinery and equipment is the most input intensities and the least progressive activity. According to the Belarusian economy experienced negative trend in this direction in 2010 compared with 2006, namely: a significant increase in the share of these costs on 65,1% or 20 percentage points (or 11,8 percentage points compared with 2008).

Expenditure on research and development of new products and methods for their production, as well as production design are among the most progressive. On the first sight for the period 2006–2010, the dynamics of negative – decrease in share to 21,4% (or 5,1 percentage points), but for the period 2008–2010 the dynamics of positive – increase on 2,3 percentage points, the second trend of positive growth – on 3,6 percentage points.

When studying the cost structure by type of activity can be noted: the highest proportion of expenditure on research and development can be noted in the activities related to computing equipment (94,4%), production of vehicles and equipment (64,4%), manufacture of electrical equipment, electronic equipment and optical equipment (42,8%), non-metallic mineral products (32,5%), manufacture of coke and refined petroleum (30,5%), machinery and equipment (29,5%), high proportion of costs Production design is observed in many industries: the manufacture of rubber and plastic products (31,2%), metallurgy (15,7%), manufacture of coke and refined petroleum (12,3%), machinery and equipment (11,4%).

This analysis shows in which industries in recent years have witnessed a growth of real innovation capacity, based on the development of more advanced types of innovation.

In studying the structure of expenditure on technological innovation in 2010 by area of the Republic revealed the following: the maximum share of the costs of research and development marked in Grodno region (37,3%) and the Gomel region (29,9%), and the smallest – in the Brest region (2,4%), the largest share of the cost of production design was observed in the Mogilev region (16,8%), and in the Vitebsk region (16%), and less progressive expenditure on the acquisition of machinery and equipment noted that their share lower than in the Grodno and

Minsk regions, and higher in Brest and Mogilev regions. Thus, the most advanced cost structure in 2010, evolved in the Grodno region.

Consideration of the limiting factors of innovative development, can become more versatile and complete the analysis of transaction costs. This is due to the fact that the effective activity of the company in the market depends on the ability of a business entity, together with costs directly related to the production of goods and services bear the transaction costs arising from the need to build and support relationships with all counterparties in the external and internal environment.

The ability to overcome the barriers of penetration of small businesses into the market is governed by the ability of the economic subject to arrange and support relations with all counterparts in the external and internal environment in addition to management of costs of production of goods and services and to bear the transaction overheads of such relation.

To create an effective mechanism for motivating the following actions:

- revision of pay participants in the innovation process, including the development of a new order bonuses for achieving specified performance upgrade products, expanding exports of high technology products, mechanisms for participation in the profits of workers, ensuring its growth through innovation.
- changes and amendments to existing legislation aimed at improving the social status and level of motivation of scientists whose work involves the creation of new objects of copyright and industrial property rights.

CONCLUSION

Innovation activity of enterprises is restrained by many objective and subjective problems (global financial crisis, unstable financial, high risk, absence of one's own research and designing resources, scientific and market information etc.). Territorial arrangement of enterprises is influence level of activity. Local administration plays an important role to stimulate the innovation (investments from local resources, creation of legislative conditions etc.). Sources of innovation's finance are important. Ownership financial sources have been dominated in home industry now. Foreign investment is within reach of foreign enterprises. Improvement of organization information' support of innovation process it is necessary for increasing of innovation activities subjects.

The value of the level of expenditure on research and development in Belarus is very different from the level of European States and other developed countries. Since the share of domestic expenditure on research and development in GDP of Belarus (its share in 2009 amounted to 0,64%) is significantly lagging behind the performance of Western European countries: Finland (3,9%), Sweden

(3,6%), Iceland (3,1%), Switzerland (3%), Germany (2,8%), Austria (2,8%), France (2,2%). A very high level indicator in a number of countries: the U.S. (2,8%), Japan (3,4%), Israel (4,9%), Republic of Korea (3,4%). The share of expenditure in Russia (1,1%) is also higher than in Belarus, which was just above the level of some former Soviet republics: Armenia (0,2%), Kazakhstan (0,2%), Kyrgyzstan (0,2%), Moldova (0,4%), Latvia (0,5%).

In analyzing the dynamics of this indicator revealed that the level of Belarus the share of domestic expenditure on research and development in GDP in 2009 compared to 2000 decreased from 0.72% to 0.64%. At the same time in many countries of Western Europe marked its growth: Austria (142%), Denmark (134%), Slovenia (135%), Switzerland (119%), Finland and Iceland (117%), Germany (115%). Also, a slight increase in the indicator is marked in Poland.

In Belarus, there are significant differences between the developed countries in the structure of expenditure on technological innovation industry organizations. The largest share of the country occupied by the costs of acquiring machinery, equipment and software (65,5% in 2010), and the level of the types of costs are constantly rising, but from the standpoint of innovation acquisition of machinery and equipment is the most progressive input intensities and the least activity. The costs of research and development carried out on their own, are among the more progressive, but in our country they represent only 11% of the total cost. In Russia there is a similar situation: the share of the first group (the costs of acquiring machinery, equipment) is 60,8% of the costs, and the second (cost, made in-house) – 10,5%. In Poland there is a similar situation: the share of the first group (the costs of acquiring machinery, equipment) amounted to 85,1%, while the second (expenses made on their own) – 8,3%. In the developed countries of Europe the ratio of two different groups: in Sweden (13,4% and 63.2%), Denmark (18,8% and 62,4%), Netherlands (19% and 62,5%), Luxembourg (32,5% and 53,8%), Belgium (38,6% and 42,2%), Ireland (37,6% and 34,5%).

Thus, for the transition of enterprises to a higher technological level of innovative activity, they need a quantitative leap in the volume of unit costs for technological innovations that will help increase the competitiveness of products and organizations.

One of the important areas of public financial policy should be to expand the sources of private financing of innovation by encouraging the creation of venture funds [3]. In this regard, it appears advisable to agree with the need for development and approval at the state level the Regulations on the formation and use of venture funds special purpose for financing innovative activities. Implementing the above activities will create a favorable legal, economic and social conditions for innovation development, continuous improvement of tech-

nological level of production and competitiveness, and on this basis to ensure the growth and quality of life of the population, strengthening national security.

Efforts to reform the economy should be judged primarily in terms of impact on innovation. The effectiveness of the NIS related, firstly, with a favorable investment climate, facilitating the flow of investment and preventing capital flight abroad. Secondly, the efficiency of the NIS is associated with a favorable climate of innovation. Therefore the use of NIS as a criterion for decision-making will contribute to the flow of investment and innovation in the domestic economy.

REFERENCES

1. О развитии предпринимательской инициативы и стимулировании деловой активности: Директива Президента Республики Беларусь от 31.12.2010 г., № 4.
2. North D.C., Wallis J. Measuring the Transaction Sector in the American Economy, 1870–1970 // Long-Term Factors in American Growth. The Income and Wealth Series. – Chicago: University of Chicago Press, 1986. – Vol. 51.
3. Матюшков, В. Важный фактор инновационного развития / В. Матюшков, В. Анищик // Экономика Беларуси. – 2008. – №2 (15). – С. 34–39.
4. Статистический ежегодник Республики Беларусь, 2010. Стат. сборник. – Минск, 2010.
5. Об инновационной деятельности в Республике Беларусь в 2010 году. Стат. сборник. – Минск, 2011.
6. Хайек, Ф. Пагубная самонадеянность /// <http://schumpeter.ru/reading.php?book=pagub&id=0>
7. Шумпетер, Й. История экономического анализа (в трех томах), том 3. Институт «Экономическая школа», Высшая школа экономики, 2001
8. Freeman C. Technology Policy and Economic Performance. London, Printer Publishers, 1987.

Problemy Rozwoju Krajowego Systemu Innowacji

Streszczenie

Zgodnie z teorią ewolucji i rozwoju białoruskiego systemu gospodarki powinny być skierowane na poprawę innowacyjności w poziomie mikro i makro. Obecne tendencje globalizacji gospodarek narodowych prowadzi do tego, że w ostatnich latach wzrosły penetracji produktów high-tech na rynkach krajowych. Działalność innowacyjną przedsiębiorstw jest ograniczony przez wielu obiektywnych i subiektywnych problemów (globalny kryzys finansowy, niestabilność finansowa, wysokie ryzyko, brak odpowiednich badań i środków planowania, naukowe i rynku informacji itp.). Optymalna struktura wydatków na innowacje jest jednym z czynników wpływających na działalność innowacyjną podmiotów gospodarczych. Jest to jeden z wektorów wejściowych strategii innowacyjności.

Summary

In order of the theory of evolutionary and systematic the development of Belarus economy needs to be re-orientated to increasing of innovation activity in micro- and macro-levels. Modern tendencies of globalization of national economies lead to recent of intensification of the processes of penetration of high-tech products into the home markets. Innovation activity of enterprises is restrained by many objective and subjective problems (global financial crisis, unstable financial, high risk, absence of one's own research and designing resources, scientific and market information etc.). The optimal structure of innovation expenditures is one of the factors influencing the innovative activity of businesses. She is one of the input vectors of innovation strategy.