

КОЛОДИНСЬКИЙ С.Б.

д-р.екон.наук, доцент

Одеська державна академія будівництва та архітектури,

вул.Дідріхсона 4, м.Одеса, 65029

E-mail:kolodi@ukr.net

ORCID: 0000-0002-9576-5289

ЗАХАРЧЕНКО О.В.

к-т.екон.наук, доцент

Одеська державна академія будівництва та архітектури,

вул.Дідріхсона 4, м.Одеса, 65029

E-mail:robin\_a@ukr.net

ORCID: 0000-0001-8198-6569

БАБІЙ О.М.

к-т.екон.наук, доцент

Одеський національний економічний університет,

вул.Преображенська 8, м.Одеса, 65028

E-mail:olegbabiy@ukr.net

ORCID: 0000-0001-5199-228X

## СТРАТЕГІЯ ІННОВАЦІЙНОЇ АКТИВНОСТІ РЕГІОНАЛЬНИХ ГОСПОДАРСЬКИХ СИСТЕМ

**Актуальність.** Сучасні регіональні господарські системи потребують докорінної зміни стратегії інноваційного розвитку, яка поряд з іншими стратегіями набуває особливого змісту та потребує визначення її особливостей та пріоритетності у реалізації напрямків розвитку регіональних систем. Стратегія інноваційної активності повинна стати визначальною поряд з іншими стратегіями і бути покликана на зміну техніко-технологічної базису регіонів, вплинути на інформаційні ресурси визначеного типу економічного розвитку і призвести не тільки до технологічного оновлення, а до докорінної зміни всього ресурсного базису регіону, в якому пріоритет буде надаватися новітнім розробкам високотехнологічної сфери.

**Мета та завдання.** Визначити особливості стратегії інноваційної активності регіональних господарських систем, вказати на мету такої стратегії, її засоби та інструменти реалізації у практичній діяльності та окреслити можливі очікувані результати в найближчому часі.

**Результати.** На основі практичних матеріалів, зібраних під час написання статі, встановлено, що в сучасних умовах стає вкрай необхідною стратегія активної реакція на інновації сучасних регіональних господарських систем. Відставання від провідних держав у сфері інноваційних технологій стає вкрай критичним і призводить до економічної та навіть військової експансії України. Більш розвинуті країни, які використовують слабкість та незахищеність нашої країни проводять агресивну політику у торговельній сфері, нав'язують свої далеко не найкращі товари, чим спонукають до економічної залежності від них. Україна потребує суттєвого оновлення технологічного базису на інноваційній основі і провідну роль в такому оновленні повинні відігравати регіональні господарські системи.

**Висновки.** Таким чином, стратегія інноваційної активності регіональних господарських систем, повинна бути активною, можливо навіть агресивною і націленою на досягнення стратегічних пріоритетів в створенні інтелектуальних продуктів.

**Ключові слова:** інноваційна стратегія, регіональні економічні системи, активна реакція на інновації.

KOŁODYNSKYI S.B.

Doctor of Economics, Associate Professor

Odessa State Academy of Civil Engineering and Architecture,

Didrichson Street 4, Odessa, 65029

E-mail:kolodi@ukr.net

ORCID: 0000-0002-9576-5289

ZAKHARCHENKO O.V.  
PhD, Associate Professor  
Odessa State Academy of Civil Engineering and Architecture,  
Didrichson Street 4, Odessa, 65029  
E-mail: robin\_a@ukr.net  
ORCID: 0000-0001-8198-6569

BABYI O.N.  
PhD, Associate Professor  
Odessa National Economic University,  
Preobrazhenskaya Street 8, Odessa, 65028  
E-mail: olegbabiy@ukr.net  
ORCID: 0000-0001-5199-228X

## INNOVATIVE ACTIVITY STRATEGY OF REGIONAL ECONOMIC SYSTEMS

**Topicality.** Modern regional economic systems require a radical change in the strategy of innovative development, which, among other strategies, acquires a special meaning and needs to identify its features and priorities in the implementation of the directions of development of regional systems. The innovation activity strategy should be decisive among other strategies and should be designed to change the technical and technological base of regions, to influence information resources of a certain type of economic development and not only to technological upgrading, but also to a fundamental change in the entire resource base of the region in which priority will be provided with the latest developments in the high-tech field.

**Aim and tasks.** Identify the peculiarities of the strategy of innovation activity of regional economic systems, indicate the purpose of such strategy, its means and tools for practical implementation and outline the possible expected results in the near future.

**Research results.** Based on practical materials collected when writing articles, found that under current conditions is extremely necessary strategy for active response to the innovation of modern regional economic systems. The lagging behind of leading countries in the field of innovative technologies becomes extremely critical and leads to economic and even military expansion of Ukraine. More developed countries that exploit the weakness and insecurity of our country pursue aggressive trade policies, impose their far better products than they are driven by economic dependence on. Ukraine needs a major innovation of the technological basis on an innovative basis, and regional economic systems must play a leading role in such an upgrade.

**Conclusion.** Thus, the strategy of innovation activity of regional economic systems should be active, perhaps even aggressive and aimed at achieving strategic priorities in the creation of intellectual products.

**Keywords:** innovation strategy, regional economic systems, active reaction to innovation.

**Problem statement and its connection with important scientific and practical tasks.** Ukraine's economy needs radical structural changes that would help to achieve optimal proportions of its structure and ensure its socio-economic efficiency. The most powerful source of economic development of the country, its economic potential is scientific and technological progress, which is based on the intellectual resources of the country, the state of its research sphere, the technical structure of production. The accumulation of the scientific component, which is reflected at all levels of production, in all its components, becomes a leading factor for its rapid and dynamic growth, highly raising the competitiveness of Ukrainian products in world markets.

Ukraine's national interests require immediate and effective measures aimed at maintaining its scientific and technological potential, ensuring effective use of innovative management to overcome crisis in economic and social development.

**Analysis of recent publications on the problem.** Today, in Ukraine, the starting scientific and technical potential that it received in the descendants of the Soviet Union is gradually disappearing. According to domestic scientists, such as Denisyuk V., Gerasymchuk Z.V., Strykha M.V. and Yaremenko L., [1,2,3,4] the main cause of the gradual damping of economic transformations, the decline in the growth rate of the gross domestic product is not only the global economic crisis affecting the economies of all countries of the world, but first of all, scientific and technological stagnation in productive spheres of economy, reduction of production volumes, reduction of the number of jobs, mass emigration of the population, and as a result, the loss of Ukraine a worthy place among the countries that are moving along the

path of market reforms and are leading in the volume of scientific and technical development. One, according to Strykha M.V. in his work "Strategy of innovative development of Ukraine for 2010-2020 in the context of globalization challenges", the main reasons are the lack of modern innovation management, which in the context of increasing the integration role of regional economies, strengthening the levers of regional self-development, should be aimed at increasing innovation in key areas of production. And in the work of Rud N.T. "Factors of post-industrial development of the regional economy" [5, p.21-28] proposes a schematic model of the organization of regional innovation system, which should function in the conditions of decentralization of regional structures of the economy of the country and strengthening their independence.

**Allocation of previously unsolved parts of the general problem.** An important direction of structural changes, especially in the Ukrainian manufacturing sphere, is structural restructuring, a significant transition to the growth of intellectual, knowledge-intensive industries, resource-saving and energy-efficient modern technologies, the use of scientific and technological achievements. For this purpose it is necessary to put the organizational structure of innovative management in accordance with those processes that take place in the production spheres, to achieve the identity and synchronicity of actions of all structural elements of the socio-economic system of the country.

**Formulation of research objectives (problem statement).** Management of innovation development should be carried out by influencing certain factors of structural schemes, ie on the properties and elements of the object of control in general, the properties of all constituent elements of the system, their relations with other elements of this system, as well as the connection of the object of control with the environment. The very process of influencing these or other management factors relates to complex instruments - management methods and management resources.

At the same time, the ability of regional innovation structures to reproduce, accumulate and effectively use their resources is a category that can be attributed to management factors. Since the object of innovation management has the qualities of integrity, the change in the state of one or another factor under the influence of a management action, which leads to a change in the state of the object of management - innovation, as a whole, and its individual components. In order to simplify the decision-making process in the innovation management process, it is necessary to separate the management object into its structural components, but without breaking the internal dialectical relations between its components.

**An outline of the main results and their justification.** Each regional scientific and technological production system can be represented as a complex set of elements that can dissolve into several less complex objects:

- the scientific and technical level of the production process, the improvement of which is the purpose of management, which is achieved through the introduction of scientific and technological innovations;
- processes of scientific and technological development that realize the development goals act as a set of interconnected innovation fields that are integrated into the regional space;
- the production system of a region whose state is changing as a result of scientific and technological development is a highly dynamic and integral structure;
- structural elements or subsystems of a lower-order managed entity are subcontracted to higher-order structures.

Since the object of management is a complex set of socio-economic and scientific-technical relations that create a coherent system, to form the same coherent mechanism for managing such a system, it is necessary not to identify individual factors of influence, but the whole system of system management factors, different in their origin and composition of the instruments. The composition and structure of the management system is determined on the basis of the following principles:

- the system set of management factors is the image of the management object and its external environment;
- the system of governance factors has external, internal and hierarchical structures: the external structure reflects the interrelation of internal and external factors, the internal structure reflects the interrelation of internal factors with each other, hierarchical structure - the subordination of all factors;
- the importance of management factors is determined by management goals: there are a number of priority factors to achieve a specific goal. This approach allows to use for the detection of the composition and structure of the system of factors the apparatus of logical structural analysis of systems, rules for its construction and illumination of sources of active influence on systems [2, p.56-78].

The need for active integration of the factors of innovation management into a complex system and active forms of their management is confirmed by research and accumulated experience of world management. Many worlds, first of all, American companies did not receive a high return on the number of

innovative developments that were invested in equipping, updating and automation of innovation processes for a long time in the development of innovative systems, entering the markets of innovative products. This state of affairs was explained by the low interest of employees in the results of their work, poor productivity, which did not grow for a long time, and the workers performed traditional technological processes on the new equipment. It has been suggested to raise productivity through its new organization, new forms of management, such as the Taylor system, which has had better effects in the coming times. There are several points that explain this situation:

The first is to channel innovation into production systems with low efficiency: when the production organization is low, the quality of production is low, the staff does not have a sufficiently high level of qualification and is not responsible for the work performed, even the most modern equipment will ensure productivity growth and its effectiveness.

Secondly, innovations aimed at poorly organized production do not produce the expected results due to the creation of decomposite conditions for their coexistence and comparison. Only after the rationalization of operations within the system itself can we expect their compositional interconnection.

Third, innovation tends to be directed towards the implementation of labor and resource-saving technologies, while reducing labor costs, while material and stock-saving technologies, with an efficient computer-based management system, are more important.

Fourth, sophisticated and flexible production equipment is used for the most part not for its intended purpose, and sometimes where less expensive and valuable equipment can be used [3, p.121-135].

These arguments confirm the need for the formation of a system of factors for managing the scientific and technological development of production and the formation of a number of better, more predictable factors that will be consistent with the defined management goals, that is, along with innovation, to form rational forms of innovative management.

We propose to deploy at the regional level the process of innovation transformation by a schematic model, which should be presented as a sequence of interrelated steps of creating a coherent regional innovation system.

At the first stage of creation of the regional innovation system, the nucleus of the innovation system of the region is formed, which will be created at the expense of the existing in the system of a set of research and development institutes, research laboratories, higher educational establishments and other state and non-state research structures, which actively engaged in exploration and innovation. A small sphere of innovation will be formed around the core, which can be characterized as a set of innovative developments that require involvement in the manufacturing sphere.

In the second stage of the formation of the regional innovation system, the fields of innovation priorities are determined. In the diagram, they are outlined by the shaded ellipses. It is in these fields of innovation priorities that the most important for the regional economy will be the innovative resources, the best intellectual resources, the set of logistical and financial resources, which in their unity will lead to the emergence of a synergistic effect aimed at the transition to a new innovative life cycle of their development. components of the regional economy, but also its totality, including the socio-economic sphere.

In the third stage of development of the regional innovation system, a large sphere of innovation saturation is directly formed, that is, the release of the whole set of innovative products, which is equivalent to the system of needs at present and under these circumstances of the existence of the regional economy. Integrated interconnection of all components of the innovation system of the regional economy will help to increase its competitiveness and enter the world markets.

Thus, it is necessary to develop a comprehensive and interconnected system of actions, which must form interdependent stages and ultimately translate into a coherent innovation policy of the region, which will allow to create and implement such a structured innovation system, in which the elements of innovation will acquire targeted and targeted dynamic development, aimed at manufacturing the latest high-tech products.

Given the significant impact of science and all modern scientific and technological progress on modern economic processes in the region, it is necessary to develop and put into practice the management of regions of the latest economic development strategies, especially such strategies that are quite common in the practice of foreign economic entities, and especially the regions and certain areas that become priority areas. First of all, the strategy of active reaction to innovative shifts, which is closely connected with dynamic processes in all spheres of regional economy and based on widespread use of high technologies, is distinguished. In shaping the strategy of innovative development of the regions for the future and the tactics

of actions aimed at achieving it, special attention should be paid to the uncertainty and unpredictability of innovative changes in the production sphere caused by the rapid development of new technologies [6, p. 51-52].

The most important condition of the strategy of active reaction to innovation is to create long-term competitive advantage through continuous production upgrades through the use of cutting-edge technology. In order to maintain competitive advantages, new production patterns, new technologies, new forms of organization of labor, new forms of promotion of goods on the markets of markets, on the basis of which to create new competitive advantages of regions and regional development entities and with such speed, should be constantly found and involved. To keep competitors from copying existing innovations and incorporating them into their production. That is, it is necessary to constantly reproduce the process of attracting, implementing and using innovations that will give in the long term competitive advantages in the markets of the newest goods and services [4, p.101-145].

The authors propose a spatial model of an active response to innovation, which conditionally reflects the process of using innovation in the long term and can serve as a guide for the development of a regional innovation strategy.

The proposed model is a series of long-term actions aimed at applying innovation in the regional economy. We proceed from the assumption that there are already foundations of a certain innovation environment, that is, formed in accordance with our previous scheme, the core of the innovative system of the region, which is represented in the form of a sphere and in modern conditions satisfies the internal needs of production and allows to support it in accordance with the requirements of today's market. However, this situation cannot be permanent and stable, as innovative resources that have been managed to be preserved and maintained in a transitional period will soon become morally obsolete and will not meet the conditions of scientific and technological development of the regions. Therefore, the main task is to produce, search and attract to the field of production of qualitatively new innovations, capable to propel the regional economy to bigger technological processes and technological changes, which will allow not only to preserve, but also to increase the competitive advantages of the region in world markets [7, p. 3-5].

Stage of innovation shifts, which indicates the change of position in the innovation sphere of enterprises, caused by the introduction of innovations, the effect of which is measured by the plane of the sector. This effect is gradually diminishing as the aging of the innovations takes place, both in physical and moral terms, which needs further action. At this stage of strategy implementation, not only is the search for the newest technologies and possibilities of production of new, science-intensive goods, but other possibilities can be involved, namely: the organization of research and development by its own forces and forces of scientists of higher educational establishments, academic institutions, design- design and production facilities, procurement of innovative intellectual products - patents, licenses, know-how, organization of inventive and experimental work at the enterprise itself. In the aggregate and purposefulness of all actions aimed at expanding the scientific and technical potential of the internal and external nature, we can expect significant changes in the production sphere and strengthening of the commercial capabilities of the enterprise in the commodity markets.

Moving further in the strategic direction of development of the innovation process, the enterprise as a subject of market relations, acting not only in commodity markets but also in the markets of intellectual resources, enhances its innovative potential, deepens the manufacturability of the sphere of production and the knowledge-intensiveness of the manufactured goods and services. The volume of involvement of innovations in the production process is constantly increasing, and the effectiveness of innovation fields is increasing both in quantitative and qualitative terms [8, p. 21-25].

The strategy of active reaction of an enterprise to innovation has a number of features, which are shown in table 1, in which the nature of the tasks of scientific and technological development, the nature of management tasks, the system of innovative products and the corresponding technological system are highlighted. After analyzing all the possible ways of development strategies, the author found that the current strategy of active reaction of businesses to innovate should be able to convert changes in the external environment of the enterprise in its strategic and tactical advantages. Such a characteristic reflects the essence of innovative changes in enterprises, which acquire the feature of flexible adequacy of reality [9, p. 127-129].

**Features active response strategy of regional economic complex on innovations**

Content of the strategy	Term (year)	Nature of the tasks of scientific and technological development		Nature of management tasks
		Product system	Technological system	
1	2	3	4	5
Introduction of innovations that will provide market leadership	5	R&D in the market for the use of the latest product	R&D in the market of the latest technologies of high opportunities	Management of up-to-date projects
Introducing innovations that will provide leadership in another market	4	R&D in a narrow range of needs	R&D in a narrow range of needs	Finding a niche in the market that is promising
Passing on the leader moving along the main road of development	5	Adaptation of products manufactured by the leader technology	Adaptation of leader technology to the conditions of the enterprise and its improvement	Choosing a leader and adapting to the conditions of his development
Implementation of technological leap that will provide long-term competitive advantages	7	Wide range of searchable DNRs: new needs - new technical principles	Wide range of searchable DNRs: new technical principles - new technologies	Search Engine ManagementGD R
Changing strategy: choosing more appropriate conditions for development	–	Success-failure: concentration on a specific market segment	Success-failure: concentrating on a specific technology development	Market research and market assessment

Own development: calculated by the authors on the basis of sources 1,2,3,6,8,9.

Opportunities for the implementation of the latest innovations entail changes in the internal environment, and such own changes must be adequate to the changes in the external, that is, the adequacy of the internal and external environment is inherent only if there is sufficient flexibility of strategic changes in their long-term effect.

The criteria for the effectiveness of the strategy of active reaction to innovation should be tactical changes in the production structure of the enterprise. Such tactical and technical transformations of the enterprise must be appropriate in content, synchronous in time and in all other parameters adequate to changes in the environment. They are not alternative, in their orientation they become complementary and mutually reinforcing [2, p.85-97]. Effective enterprise strategy - a collection of unique and consistent operations, which must necessarily be seamlessly integrated and express a meaningful synthesis performance aimed actions.

Analysis of the external environment should take into account changes in technology, related industries, in order to quickly respond to the impact of scientific and technological progress. It must be kept in mind that the emergence of new products by competitors is inextricably linked to the innovation of production on the basis of modernized new technology or technology, so it is crucial not only to track the emergence of new technology from a competitor, but also its prediction. Today, special attention is paid to another, quite important characteristics - ecological cleanliness and waste of technologies, energy and resource-saving methods of production of goods and services, and a modern strategy of active reaction to innovations should not disturb the ecological balance existing in nature, should not unreasonably involve in the sphere production is limited by natural resources that are largely non-reproducible. Only deep internal harmony with the environment outside the company guarantees the success of strategic plans in the future. The value of such a characteristic grows year by year and may soon become the main requirement of any enterprise development strategy, and only then will innovations be applied when they become permanent in the natural environment.

Thus, the proposed model strategy of active reaction to innovation has a number of specific features and provides:

1. Systematic updating of the technological base of the enterprise on the basis of conveyor introduction of the latest developments and innovations, capable to provide rapid growth of the economic potential of the enterprise.

2. Deploying full-scale research and development to develop and create new types of high-tech products and forward technologies in the context of intellectualization of manufacturers and the promotion of innovators and inventors, armed with modern knowledge and scientific achievements in the field of high technology.

3. Development of organizational and production structure of the enterprise in accordance with the world standards of innovation management, which will ensure the production of high-quality science-intensive product [2, p.12-20].

The country's innovation potential consists of a set of innovation systems in the regions, each of which acts as a structural component of a coherent national innovation system. An extensive system of such separate, but closely interconnected, regional-level innovation systems should span the entire national economic space and act as an integrated unity of all independent business entities in the innovation market. Each subject of innovation market, of course, has specific features, it is influenced by the external macro environment and the internal microenvironment, under the influence of such opposite forces of influence the internal innovation potential is formed, that is, a specific internal innovation environment is formed.

Significant economic growth of the country's economy is possible due to the creation of a nationwide network of economic entities of innovative type of development. The development of such a network should begin with the creation of interconnected segments and structural elements, different in purpose but unique in purpose and strategic orientation of development. The content of innovative regional structures should consist of a community of research institutes and institutions, high-tech and high-performance enterprises, structures of innovative entrepreneurship and structures of risky business [10, p. 23-25].

Thus, stimulating innovation policy, focused on economic development and growth of innovative structures of the economy, becomes especially important. It, as a complex phenomenon, consists of various elements, on the one hand - the national macroeconomic policy on creating a favorable innovation and investment climate for the implementation of innovative conditions for the development of all economic entities, and on the other - the introduction at the regional level of special incentives for innovative changes that can be associated with the implementation of management actions related to technological change.

1. Financing should be aimed at supporting the formation and development of new competitive high-tech industries and industries that will form the basis of the material and technical base of long-term economic growth of the country, especially in the areas such as biotechnology, aerospace, information technology, production of new industrial materials, etc.

2. Creation of a modern innovative infrastructure based on active support of the processes of development of transport and communication networks, especially information with the possibilities of online use of world information networks, in particular the Internet, for a wide range of users with connection to the existing European and world business infrastructure.

3. Implementation practice reforms of benefits for income tax technoparks when used for innovation, while introducing flexibility depending on technological change.

4. Appropriate legislative support and development of a clear system of measures for the development of technological potential and its use in entrepreneurship is necessary, taking into account the latest entrepreneurial forms and organization of modern business.

5. Preserving the number of scientific potential of the staff by creating a favorable social climate in the teams and a system of stimulating the work of scientific, technical and engineering personnel. It is necessary to preserve the number of specialists performing research and development with a qualitative improvement of their level.

6. Increased funding of science by expanding funding sources, including increasing state budget funding scientific research to 2.0% of GDP.

7. Strengthening the search for new scientific and technological priorities and organizational and financial support for their implementation in the short, medium and long term in accordance with national and regional needs of structural restructuring of the country's economy.

8. Management monitoring and publicity should be put into practice with mandatory prompt feedback on the effectiveness of measures to stimulate innovative entrepreneurial activity, coverage of the results

obtained in the scientific press and reporting on innovative developments and the results of their implementation in production.

9. Apply tax credit to the increase in the amount of expenditures by business entities on research and development related to the adaptation of the latest technology to the specific conditions of production, where they are implemented. Higher initial costs of development of new products require regulatory system more equitable distribution of their volume during the entire life cycle of innovation.

10. Introduction of stimulating cooperation of science and industry in the innovation process by setting the preferential tax treatment of innovative business structures and parks. Definition of norms of formation and termination of activity of organizational forms of business within which cooperative or joint research and implementation works are united, uniting research institutions, production enterprises, banking and financial organizations that create, implement or invest scientific and technological innovation.

11. Establishment of legal relations for the protection of industrial property rights: to protect the property of all participants in the scientific and technological cycle of creation and use of the invention so that they have a strong economic motivation for innovative creativity.

12. Implementation of the provision on accelerated depreciation of fixed assets of business entities. This measure is aimed primarily at stimulating innovative investment process is the creation of new products, development of advanced materials and their synthetic substitutes.

13. Defending the rights and interests of domestic innovators in foreign markets: supporting the active participation of domestic producers of goods and services in the international division of labor, avoiding cases of unfair and doubtful competition, active participation in all leading international organizations governing the world technology transfer.

In the conditions of transition to market forms of management, one of which is a technology park or technopark, a qualitatively new system of industrial relations is formed, in which the ways of state stimulation of business structures are changing. It is necessary to take into account the peculiarities of the formation and development of market forms at different stages of structural transformation, in order to constantly improve methods of influencing the interests of economic entities and increase the material interest of employees.

**Conclusions and perspectives of further research.** Thus, improving the implementation of economic stimulation' forms of industrial parks as the main forms of innovation development must be accompanied by a decrease in administrative techniques and methods of managing and converting market instruments in one of the main regulator of economic activity. The course taken to develop market relations in the economy and give autonomy to the regions must be accompanied by decentralized management in economic activity, independence in the distribution and use of profits for investment needs and current consumption. Such conditions are an objective necessity because, as practice has shown, a centralized system of distribution of regional resources and a decisive distribution of profits lead to a decrease in the efficiency of social production. Administrative management of production facilities, focused primarily on the fulfillment of economically justified tasks, which require the creation of an innovative climate in the region and encourage the attraction of investments in the newest fields of research and development work, aim at the formation of risk capital in development and development of projects in regional innovation systems.

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