



УДК 658.001.76+330.341.1
JEL Classification Code O31; O12; D70; D25

L. Lisovska¹, O. Mrykhina², B. Sheremeta³, L. Ivanets⁴

Lviv Polytechnic National University, Ukraine,

^{1,3} Management of Organizations Department,

² Department of Business Economics and Investment,

⁴ Separate Structural Unit “Technical and Economic Vocational College of
Lviv Polytechnic National University”

STRATEGIC GUIDELINES OF REGIONAL MANAGEMENT DEVELOPMENT OF SYSTEMS INTERACTION IN INNOVATIVE PROCESSES OF THE REGION

<http://doi.org/10.23939/semi2021.02.084>

© Lisovska L., Mrykhina O., Sheremeta B., Ivanets L., 2021

Purpose. The article substantiates the strategic principles of development interaction systems in innovation processes of the region, which includes defining goals on a conceptual basis to ensure the value of interaction, clarifying the composition of subjects and objects of development regional interaction systems, implementation in certain stages.

Design/methodology/approach. The goals set in the study were solved using the following general scientific methods: general scientific and special principles and techniques of scientific knowledge in the field of strategic management of innovative development of territories.

Semantic analysis, comparative analysis and systematization method were used to carry out the theoretical substantiation of the system of strategic goals of regional development; the method of grouping, factor analysis, the method of structural-logical modeling is used in the development of a set of operational tasks to achieve strategic goals. An abstract-logical method was used to formulate conclusions and theoretical generalization of the results of the study.

Findings. The subject of strategic management interaction in the innovation processes of the region is “innovation development”, which takes into account the interests and goals of the subjects in the innovation process of the region. Strategic interaction management is carried out by defining goals on a conceptual basis to ensure the value of interaction, which involves the implementation of certain stages.

Adherence to the proposed sequence of stages will ensure the required level of interaction value in regional systems for all participants in the innovation process on a strategic basis. The central apex of the “goal tree” is a strategic goal, in our context – ensuring the value of interaction in innovation processes. This strategic goal is deployed in tactical goals that capture large blocks of action to achieve a strategic goal, namely; block of rational use of innovation resources of the region, block of ensuring the usefulness of interaction, block of optimization of the cost of establishing interaction, block of increasing the productivity of innovation processes in the region, block of development of innovation infrastructure of the region.

Practical implications. An obligatory stage in the formation of regional cooperation systems is the coordination and harmonization of the interests of potential participants on the basis a rational compromise to achieve the goals of regional development. The specified strategic goal is developed by the authors into tactical goals, which fix large blocks of actions to achieve the strategic goal, namely the block of rational use of innovation resources of the region, the block of ensuring the usefulness of interaction in regional interaction systems, the block of optimizing regional interaction, block of development of innovation infrastructure of the region.

The need for improving regional management of the development interaction systems in innovation processes is due not only to its national importance for the development of NIS, but also the economic content – the formation of the economic base and support drivers of social and economic development of regions.

It was proved that regional government institutions should fully support the development of the economy on market principles, while assuming the main responsibility for comprehensive overall regulation and strategic planning of economic development and direct support of the innovation process.

Originality/value. For each of these blocks of strategic goals, the article substantiates a set of socio-economic tools for implementing tasks in regional interaction systems, which differ in the components of interaction systems, scope, nature of direction, duration, complexity of use, level of consistency, purposes of use, source of funding, direction raising funds.

Summarizing the substantiation of strategic goals for interaction systems development in innovation processes of the region, it is necessary to emphasize harmonization and coordination of goals of interaction system formation with goals of innovative development of the region and individual goals for potential participants of interaction systems. After all, the development of interaction systems takes place through the maximum involvement of market stakeholders in cooperation and ensuring the value of their coordinated joint work on innovative projects and programs.

Key words: innovative development, interaction, interaction in innovations, innovation process, tree of purposes, development goals.

Paper type: Research paper.

Introduction

The dynamics of Ukraine's ratings for innovation capacity in 2014–2020 allows us to conclude that there is no active policy and breakthroughs in supporting innovation by both the state and business. Weak state institutions, an unfavorable environment for conducting innovative business and an unfriendly financial system hinder the disclosure of entrepreneurial potential, create obstacles to the commercialization of innovations and their impact on GDP growth. Ukraine has remained in the group of countries with below-average income over the last decade (according to the World Bank grouping of countries) [1, p. 23].

Ukraine faces three major barriers to developing innovation policy: (1) regulations that are inadequate, contradictory and at times poorly enforced; (2) the absence of certain institutions and (3) the rather low capabilities of policymakers to successfully formulate and implement policy initiatives. The new innovation strategy recognizes international collaboration in science and innovation as a priority. Ukraine has multiple agreements with international partners to cooperate on conducting joint research projects and developing innovative solutions [2].

During January – February 2020, the Ministry of Education and Science of Ukraine together with the Ministry of Economy, Trade and Agriculture of Ukraine and the Ministry of Digital Economy conducted a survey of business representatives on innovation and current needs in Ukrainian research and development, which can improve the level of implementation of Ukrainian R&D in the real sector of the economy, is the intensification of innovation policy instruments, in particular: understanding by the scientific community of market needs; strengthening the level of communication between stakeholders; introduction of a working and accessible business platform with a base of technologies and developments; development of innovation ecosystem (business incubators, technology parks, innovation parks, free economic zones, etc.); creation of a legal framework for transparent and simple financial interaction between the private sector and research institutes, etc [3].

The need to reformat the innovative development mechanism of the region on the basis of development models for open innovation in the context of globalization processes highlights the need to

local governments to find new and improve existing approaches to establishing and developing various forms and technologies of interaction between all participants.

The establishment of various forms of cooperation needs to be reviewed in connection with the development reforms of decentralization of power on the basis of strategic development for individual territories, harmonization of priorities for innovative development of the country and its individual regions. These trends necessitate the development of strategic principles for the development interaction in innovation processes.

Analysis of recent researches and publications, problem statement

The experience of foreign countries with market economies proves that in matters of innovative development cannot rely entirely on automatic market mechanisms. The use of innovations cannot be only a private or partial problem of a particular enterprise or region, it becomes more public, as the socio-economic prospects of a country increasingly depend on how organically innovative processes take place there. Thus, the priority of centralized methods of managing innovation processes is proven by world practice.

Theoretical and methodological principles of strategic management on innovative development of regions are the subject of scientific interest for scientists who identify various aspects of solving this problem.

T. I. Grinka & N. S. Krasnozhan have established the factors that determine the effectiveness of regional innovation policy as a priority for ensuring innovation activity in the country as a whole [4, p. 25].

In particular, A. Yu. Polchanov, L. S. Zakharkin have established the relationship between the results of the implementation the regional financial policy with indicators of investment and innovation activity of economic entities in the region [5, p. 170].

V. I. Lyashenko, I. Yu. Pidorycheva have proposed mechanisms for the formation of regional innovation systems of Ukraine [6, p. 15], S. B. Kolodynsky, O. V. Zakharchenko, & M. A. Zayets, have substantiated the levers of selection and implementation of regional innovation and investment projects [7, p. 91], T. K. Kvasha, & O. F. Paladchenko have investigated the mechanism of formation and state of realization regional innovation priorities [8, p. 5]. O. A. Yermakova defined the principles of strategizing innovative development, based on which the process of strategizing innovative development of the region was improved [9, p. 333].

However, considering the significant scientific achievements of researchers, as well as the specifics of the problem of ensuring the value of interaction, it seems necessary to deepen research in line with the development of strategic principles for managing the development of regional systems of interaction in innovation processes.

The need in improving regional management of the development of interaction systems in innovation processes is due not only to its national importance for the development of NIS, but also the economic content – the formation of the economic base and support drivers of social and economic development of regions.

On the one hand, in a market economy, innovation is the main means of increasing the profits of economic entities by better meeting market demand, reducing operating costs compared to competitors. On the other hand, under the conditions of classical market mechanisms, obtaining scientific and technical results and their implementation in economic practice will be significantly complicated.

Purpose and tasks of the research

This study aims to identify strategic guidelines for regional management for the development of interaction systems and the implementation of the strategy interaction in innovation processes.

For achieving this goal, the authors need to develop a system of strategic goals of innovative development of the region and justify the operational objectives to achieve them.

Methodology

The achievements of economic theory, general scientific methods, methodological approaches of theoretical innovation and strategic management were used as a methodological basis of the presented work. The authors of the study carried out with the involvement of general scientific and special principles and techniques of scientific knowledge in the field of strategic management of innovative development of territories.

Semantic analysis, comparative analysis and systematization method were used to carry out the theoretical substantiation of the system of strategic goals of regional development; the method of grouping, factor analysis, the method of structural-logical modeling is used in the development of a set of operational tasks to achieve strategic goals. An abstract-logical method was used to formulate conclusions and theoretical generalization of the results of the study.

The use of this methodology is consistent with the requirements of JEL classification codes for scientific and economic research.

The described methods allowed to carry out research of theoretical and applied bases of innovative development of regions, therefore are coordinated with the block O: Economic Development, Innovation, Technological Change, and Growth, O1: Economic Development, in the category O12: Microeconomic Analyzes of Economic Development.

The proposed provisions and approaches are based on the study and generalization of the fundamental provisions of the theory and practice of innovation processes, so the selected methods provide block O3: Innovation, Research and Development, Technological Change, Intellectual Property Rights, namely O31: Innovation and Invention: Processes and Incentives.

Substantiation of approaches and formulation of research conclusions is performed by a set of methods in block D: Microeconomics, namely justification of management decisions on joint innovation D7: Analysis of Collective Decision-Making, D70: General.

Identifying and systematizing the factors of interaction in innovation processes allows businesses to ensure the use of development potential, so the methods used belong to block D2: Production and Organizations, D25: Intertemporal Firm Choice: Investment, Capacity, and Financing.

The main material

The experience of foreign countries with market economies proves that in matters of innovative development it is impossible to rely entirely on automatic mechanisms of market regulation. The creation and implementation of innovations can not only be a private problem of a particular business entity or region, it becomes more public, as the socio-economic prospects for the development of individual regions increasingly depend on how effectively innovation processes are implemented there. Thus, the importance of involving regional authorities in the implementation of innovation processes has been proven by world practice.

Thus, regional government institutions must comprehensively ensure the development of the region's economy on the principles of the open innovation model, taking responsibility for balanced regulation and strategic planning of innovation development and direct stimulation of the innovation process. The task of regional government institutions at the pre-commercial stages of the innovation process, in the market of high-tech products, in the system of stimulating innovative activity of basic science, in fulfilling the goals of locating business structures in the region, effective use of innovation potential are important.

The expediency of implementing strategic management in the field for ensuring the value of interaction in the innovation processes of the Ukraine's regions is determined by the following factors:

- the modern stage – is the beginning of construction a new practice for local government management, which causes insufficient study and theoretical validity of the latter;
- modern approaches to the implementation of innovative development goals of the regions were formed during the development integrated and network models of the innovation process and do not meet the criteria of effectiveness for open innovation models;

– the system of interaction should be formed on the basis of ensuring the value of interaction for all participants in the innovation process;

– feature of the current situation in management of innovative development for the regions of Ukraine, when the latter took over the functions of the subject for management and improve regional systems of interaction based on the development clusters, industrial parks and state-public partnership mechanisms.

In our opinion, methodological provisions of strategic management should be applied for formation of bases on development systems of interaction. After all, it is strategic management that allows you to implement in the long run a set of interrelated planning actions that form the measures of the planning mechanism to achieve development goals in a rapidly changing environment.

In order of developing strategic bases for the development of interaction systems in the innovation processes of the region, it is necessary to define the goals, subjects and objects for ensuring the development interaction systems, the subject of management.

The subject of strategic management of interaction in the innovation processes of the region is “innovation development”, which takes into account the interests and goals of the subjects in the innovation process of the region. Strategic interaction management is carried out by defining goals on a conceptual basis to ensure the value of interaction, which involves the implementation of certain stages, which is presented on Fig.1 as an algorithm.

The basis for the formation of strategic principles for managing the development of interaction systems should be the legal framework, namely – the main provisions of the Concept of Innovative Development of Ukraine, the Law of Ukraine “On Stimulating Regional Development”, Resolution of the Cabinet of Ministers of Ukraine of November 16, 2011 No. 1187 “The effectiveness of the implementation of joint measures provided for in the agreement on regional development”, “Some issues of analysis of the effectiveness of public-private partnership”.

The conceptual basis of substantiating the strategic principles is to build a “tree of goals” for the development of interaction systems in the innovation processes of the region and the development a strategy for the development interaction.

The central apex of the “goal tree” is a strategic goal, in our context – ensuring the value of interaction in innovation processes. This strategic goal is deployed in tactical goals that capture large blocks of action to achieve a strategic goal, namely; block of rational use of innovation resources of the region, block of ensuring the usefulness of interaction, block of optimization the cost for establishing interaction, block of increasing the productivity innovation processes in the region, block of development innovation infrastructure of the region.

Successful implementation of tactical goals involves the formation of operational goals. Operational goals form the root of the “goal tree”, the main requirements for which are the absence of conflicts and coordination of interests, systemic and achievable and indicate the priority areas of strategic goal – ensuring the value of interaction in innovation processes. Formed “goal tree” to ensure the development of interaction systems is presented in Fig. 2.

The formed operational goals need additional explanations, that is clarification of the content of each of them in the block of strategic goals and ways of realization.

Each of the selected blocks of goals should be based both at the institutional level of individual participants in the innovation process and at the regional level.

Implementation of the block “Ensuring the rational use of innovative resources of the region” provides for three separate current goals, which include improving the efficiency of the innovative potential of participants in the interaction systems and the region: improving the efficiency of material resources; improving the efficiency of intangible resources and intellectual potential; increasing the level of use of scientific and technical resources of the region.

Under the innovation potential it is advisable to understand the ability of the subject for creating new value by attracting all its existing tangible and intangible assets to achieve its innovative development

[10, p. 65]. In market conditions, the innovation potential is formed by all the resources that ensure the achievement of competitive advantages of the participant in the innovation process through the development and implementation of innovations. These resources cannot be divided into basic and auxiliary, as this division would be quite conditional, as the priority of the components of innovation potential depends on the type of activity and belonging to the NACE, its organizational structure, level of information support, location, level of development of all forms of infrastructure. Therefore, it is expedient to single out the set of material and the set of intangible resources that can be used in the process of performing tasks and stages of the innovation process.

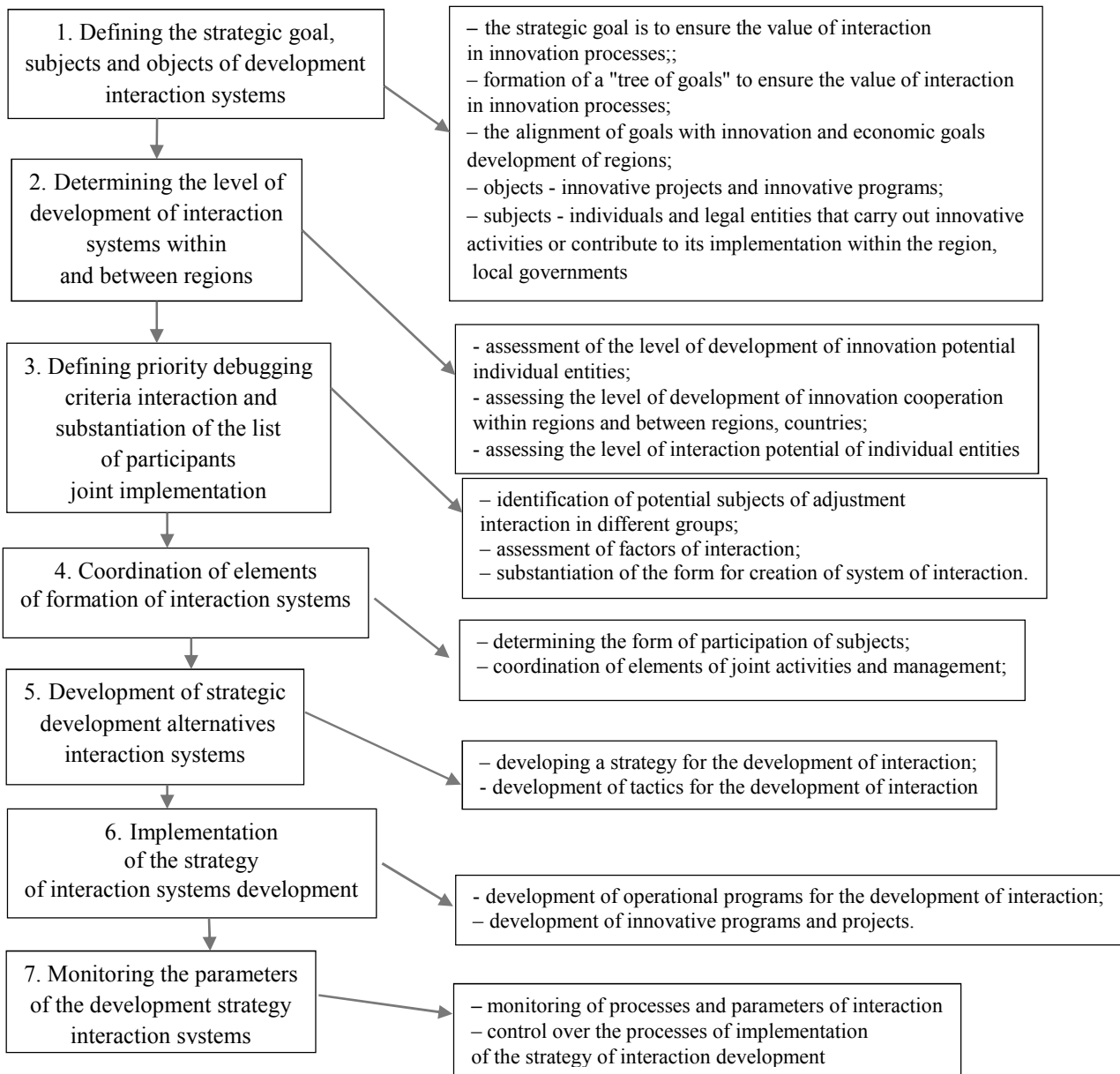


Fig. 1. Algorithm for developing and implementing a strategy for the development interaction systems in the innovation processes of the region

* Developed by the authors.

Strategic guidelines of regional management development of systems interaction in innovative processes of the region

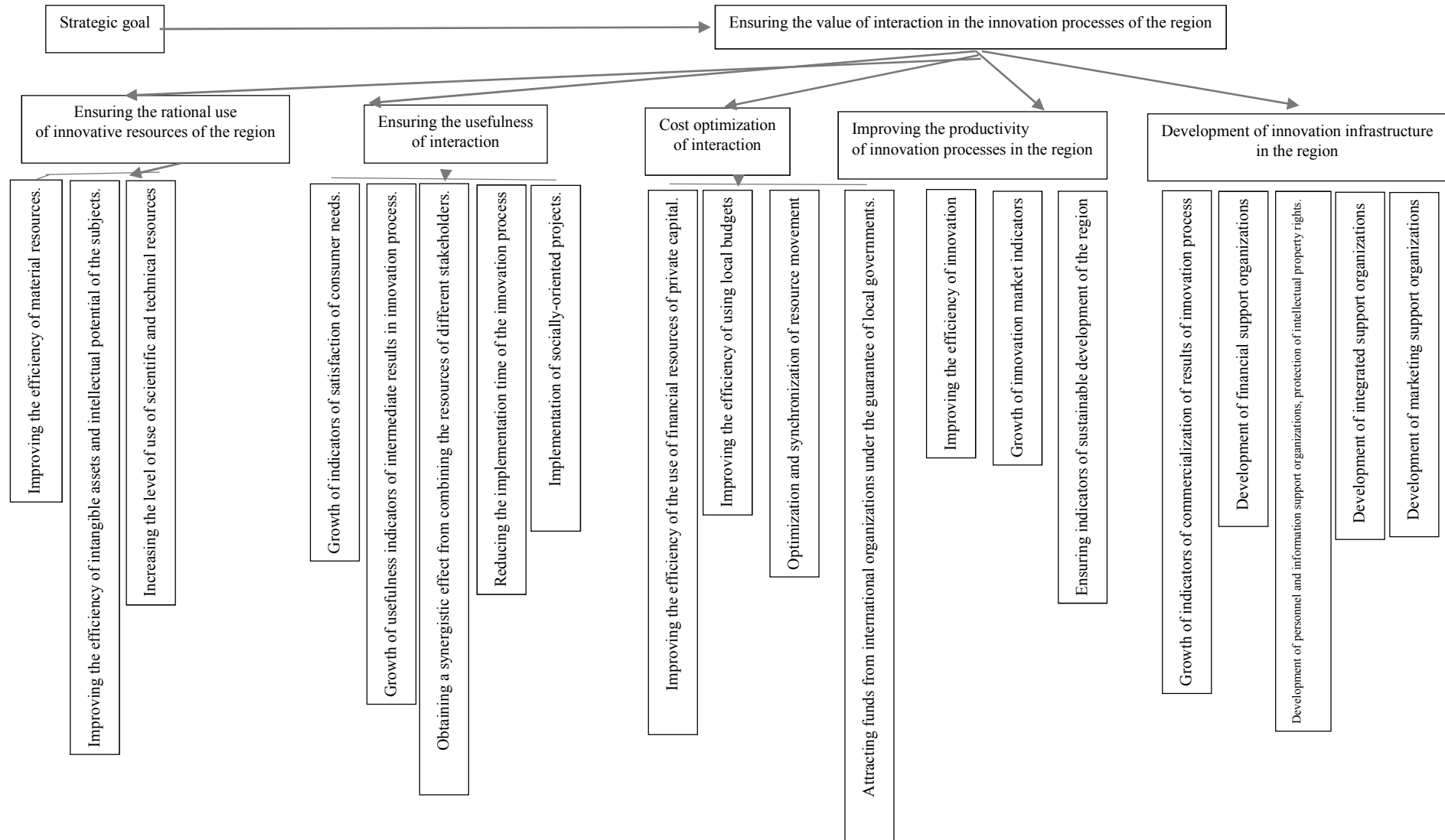


Fig. 2. "Tree of goals" for ensuring the value of interaction in the innovation processes of the region

* Developed by the authors.

Therefore, the operational goal of “Improving the efficiency of use of material resources” includes: planning the rational use of resources by economic entities; economic incentives for local governments to increase the use of material resources in the process of innovation; formation of tasks of innovative development depending on what resources the region aspires to use; granting soft loans for the purchase of fixed assets by the subjects of the innovation process; creating favorable conditions for the rapid implementation of the innovation process; determining the effect of the implementation of regional innovation policy.

To “Improve the efficiency of use of intangible resources and intellectual potential” it is necessary for implementing such current tasks as: development of a database of IPRs in the region; formation of information support for the rational use of intangible resources; development of directions of mechanisms of legal protection and use of intangible assets in operational activity of the enterprises.

The innovative model of economic growth is based on the effective formation, maintenance, use and development of scientific and technical potential of the region, that is a set of intellectual, technical, technological, financial, information resources of the scientific sphere, integrated with certain principles and management system.

Implementation of the operational goal “Increasing the level of use of scientific and technical resources” involves: identification of priority branches of science for the development of the region and development a strategic plan for their support by a set of modern mechanisms of the “open innovation” model; creating an organizational form for finding and establishing partners for research stakeholders in the region based on a combination of industry and problem-oriented approaches; implementation of a clear structured division scientific and technical potential of the region into commercial and non-profit part; developing and ensuring the functioning of innovative regional clusters based on a multidisciplinary approach; bringing the process of formation of sources of financing of scientific and technical activities of the region in accordance with the requirements and norms of development of current legislation; development of a mechanism for regional incentives to attract investment in science and technology, etc.” [11].

Due to the special importance of conducting research for the innovative development of regions, it is advisable to include research in such operations that during the conclusion of transfer agreements will be subject to VAT at zero rate or will be exempt from taxation regardless of their source of funding.

The development and implementation of appropriate measures in priority areas at the regional level will ensure the development of scientific and technical potential and its competitiveness in the NIS.

Implementation of the block of strategic goals “Ensuring the usefulness of interaction” involves the implementation of operational goals that expand and deepen the parameters of the benefits on the innovation process from the joint implementation of stages and works, which together provide a tangible or intangible effect. The expected effect can be instantaneous, or it can have a prolonged parameter in the form of economic, environmental or social result (for example, sustainable development of the region in the long run).

It is necessary to consider several levels of benefits from the well-established interaction of different stakeholders:

- 1) food and property;
- 2) economic;
- 3) social;
- 4) political;
- 5) religious;
- 6) cultural and ideological;
- 7) scientific (intellectual) – spiritual [12].

The usefulness of interaction is based on the use of interaction competencies – a unique set of skills, abilities, technologies that allow entities to establish processes of joint activities with partners. The usefulness of interaction is the effectiveness of the system interaction, which is expressed in obtaining useful results of its operation in the form of benefits for participants in the system. Increasing the usefulness of interaction can be observed through the parameters of the process changing relationships, the results of which are the expansion of IG participants (quantitative aspect), integration of IG participants

(structural aspect), formation of new values and implementation of key competencies of interacting parties (qualitative aspect) [13, p. 57].

The block “Growth of indicators of satisfaction of consumer needs” is realized through such operational purposes and tasks as: growth usefulness of indicators intermediate results of innovation process; growth usefulness of indicators innovations; reducing the time of implementation the innovation process.

The development of interaction systems in the innovation processes of the region should ensure fuller satisfaction of consumer needs, that is should be based on mechanisms: constant monitoring of the needs consumers and industrial markets to update the level and depth of needs; identification key competencies of participants in the innovation process of the region to find and establish innovation cooperation within the region or other domestic (foreign) partners; formation an organizational form by local governments to find partners according to the established criteria of interaction; formation promotional materials and organization of events for providing the results of innovation processes in the region.

The reproduction of social resources of the region is affected by the development social programs for residents of the region and increase their solvency, and thus – the growth of real disposable income and regulation of inflation.

For the “Implementation of socially-oriented projects” of the region we consider the following operational goals necessary: the definition of innovative programs and projects that are formed around the achievement of significant social results for the region; inclusion of socially important projects and programs in the Programs of social and economic development of the region; formation the mechanisms for involving market stakeholders in socially important projects with goals that are consistent with the development goals of the region and the required level of innovation potential; monitoring the implementation of socially important projects and programs on the basis of agreed criteria and indicators; the use of technologies to mark those businesses that are expanding jobs in the region.

The current goal of “Synergizing the pooling of resources of different stakeholders” is to identify sources of synergy and evaluate the effects of pooling resources.

The principle of synergy in innovation is the mutually reinforcing action of several participants, which increases the orderliness of innovation processes in general. Creating the value chain of innovation is due to the transformation of simple agreements between partners. The result is an increase in the efficiency of innovation, that is a synergistic effect. Traditionally, the types of synergistic effect include financial, operational, marketing, management and others. However, the emphasis remains on research, which is considered the most risky and costly stage of innovation processes. Complementarity of key competencies of participants in the innovation chain allows you to create an effective business model and a unique offer for consumers.

The main advantage of synergy in the innovation processes of the region is the ability to achieve higher consumer value of the created innovation through the implementation of joint efforts of individual participants in the innovation ecosystem than the result of their separate independent activities. Achieving the highest consumer value of innovation can be ensured: through the joint use of innovation potential from individual participants in the innovation process, which allows to activate hidden “underused” assets; and/or joint use of external favorable factors for the development of the innovation process for an individual participant; and/or reduction of time costs for the implementation of the innovation process.

Thus, the principle of synergy in innovation is a mutually reinforcing action of several participants, which increases the order and self-organization of innovation processes in general. The implementation of the synergic principle is carried out through the formation of an additional result of the innovation process, which can be measured by reducing the cost of innovative products for the consumer, increasing its value for the consumer.

The effects of synergism can be manifested in parallel planes, that is symmetrically to the traditional products/activities of the participant in the innovation process. That is, “synergism is not only the best way to accelerate the growth of production of a new product without much additional investment, but also has a significant reverse effect on the cost of production of traditional goods” [14].

The block of strategic goals “Optimization of the cost of establishing interaction” is determined by the level of innovation attractiveness of the region. The innovative attractiveness of the region is determined and can be assessed through the use of such indicators of innovation and investment activity as “index of gross regional product per capita; income index per 1 employee in the region; index of foreign investment per employee; volume of attracted foreign investments for the year in UAH million; index of the share of fixed capital investment in gross regional product; index of innovation-active enterprises in the total number of registered in the region; index of the region’s participation in the formation of gross value added; gross value added of the region; export index in gross regional product” [15, p. 158; 16].

It can be generalized that the block of strategic goals “Optimization of the cost of establishing interaction” is determined by the level of achievement such current goals of development interaction systems as:

- Improving the efficiency of using financial resources from private capital: development and implementation of tools for tax incentives for innovation of business entities: reducing the tax rate (tax base) on the amount of those investments that are innovative and meet the criteria set by regional authorities and TG); tax holidays (for business entities in the field of priority areas of innovative development of the region and for newly created entities operating in the market of high-tech products); tax write-off (reduction of taxable income), tax credit (reduction of the amount of tax liability), the use of tax rates that are differentiated according to criteria established by regional authorities, or their reduction.

- Improving the efficiency of the use of local budgets provides the following tools for implementation: providing soft loans for innovation to those businesses that are involved in creating systems of interaction on the basis of joint financing (public-private partnership); development a mechanism for financial and credit support of small enterprises involved in the implementation of regional innovative social or environmental programs; formation of a favorable tax regime (benefits, deferrals) for enterprises and organizations engaged in the construction, reconstruction and implementation of new and energy-saving technologies; creation of foundations for extra-budgetary financing of science and innovation by business at the level of not less than 50 % of what is required by the law “On Science and Scientific and Technical Activity” – 1.7 %. The sources of the fund can be as follows:

- to lead in target accruals for the income of enterprises of the “raw material cycle”;
- during the transfer abroad of Ukrainian technologies, which is made at the expense of the budget, to introduce a mandatory contribution of 3–5 % in the NFD for the development of science and innovation;
- introduce VAT on imports of foreign technology (now – zero) and other intangible assets that should go to the National Research Fund the amount of the contract).

- Optimization and synchronization of resource movement. It is proposed to achieve the goal through the following measures: improvement of communications between such subjects of innovation process of the region as scientific institutions, research institutes, subjects of small and medium innovative business on the basis of reasonable financial participation in the “idea-market” chain; increasing the level of information flows and interaction of small and medium-sized innovative businesses with EU programs, the European Enterprise Network, etc.

The strategic goal “Attracting funds from international organizations under the guarantee of local governments” involves the development of such mechanisms as: subsidizing innovative business entities that produce goods (provide services) in the framework of interregional cooperation; regional support (subsidies, loans, loans, cash and property contributions to the authorized capital), including competitiveness support: short-term (1–2 years) benefits or tax credit for taxes (VAT) and local fees; support of innovative technologies through the provision of guarantees by regional authorities and TGs in tender procedures; when concluding concession projects financed from foreign sources, also provide for the same tax on the intangible part, which in the absence of IPR in Ukraine should go to the trust fund for development, and in the presence of IPR in the country to direct the involvement of Ukrainian scientists/designers/subcontractors for exploration, design and research work in the same amount; creating an investment climate that would promote foreign and private investment; ensuring the practical implementation of program documents that have been developed to increase the intensity of the innovation process at the regional level.

The block of strategic goals for the development interaction systems in the innovation processes of the region “Increasing the productivity of innovation processes in the region” can be considered as system-forming and basic. Development on the basis of innovations is the most important factor in increasing the level of socio-economic development of the region, and its result is to increase the competitiveness of the technological region. The result is manifested in a dynamic increase of labor productivity, innovation and environmental friendliness of production (business) processes, as well as in the growth in added value for science-intensive sectors of the region’s economy.

For implementing the block “Increasing the productivity of innovation processes in the region” it is necessary to implement such operational goals as: increasing the level of efficiency of innovation; growth of innovation market indicators; ensuring indicators of sustainable development of the region.

It is determined that the main efforts for increasing the productivity of innovation processes in the region should focus on supporting the production and marketing of medium and high-tech innovative products, which will increase the competitive advantage of the business environment and increase the level of industrial processing for innovative products [17].

An important direction for improving the efficiency of innovation in the region should be the development of innovation potential of small and medium enterprises. Promoting the efficiency of small and medium-sized innovative businesses is important for the market of the region (in particular, by motivating entities to carry out joint research and development), as well as for interregional cooperation.

One of the directions in developing regional systems of interaction is substantiation of economic and innovative specialization of regions [18, 19]. This direction should be implemented through the implementation of projects aimed at attracting investment and integration of Ukrainian enterprises into global value chains; joining the European Platform for Smart Specialization, which will improve innovation cooperation with EU regions in thematic areas, effectively attract private investment. Increasing the productivity of innovation processes necessitates the development of cluster cooperation in innovation processes.

The block of strategic goals “Development of innovation infrastructure of the region” provides for the implementation of the following operational goals: growth indicators of commercialization the results for the innovation process; development of financial support organizations; development of personnel and information support organizations, protection an intellectual property rights; development of integrated support organizations; development of marketing organizations.

For ensuring the implementation of this block, it is necessary to take measures for support newly established startups and consulting organizations, financial assistance to small and medium-sized innovative businesses to implement regional R&D, develop investor relations, ensure access to EU grant programs.

In order to develop the innovation infrastructure, it is necessary to create a regional support service to provide information provision and advice on legal norms and basic rules for the protection of intellectual property rights in Ukraine and abroad [20]. It is also necessary to disseminate modern organizational tools for supporting business projects, introduce new and improve existing ways of coordination and cooperation of individual actors in the innovation process in the region. Innovative cooperation should be based on the principles of synergy for regional structures and cover various areas of support: production, scientific and technical, educational, financial, information, marketing and others.

The development of regional innovation infrastructure will be facilitated by: increasing the volume of financing into innovation processes, in particular at the expense of local budgets, resources of investment funds; accelerating the introduction of scientific and technological research in the business environment, in the markets of the region; improving the mechanisms of commercialization of scientific and technical developments; implementation of regional innovation policy aimed at technological modernization of regional economic complexes through the introduction of innovative technologies, in particular, resource-saving and ecologically safe, increasing the level of ecological safety of regional ecosystems, improving the efficiency of local natural resources, etc.; formation of close relationships and strengthening the depth and intensity of relations between the subjects of the innovation process of the region; creation the base of experts for conducting scientific, technical and environmental expertise of innovative projects.

Conclusions

The conducted research allowed to develop theoretical and substantiate methodological bases of development of systems of interaction in innovative processes of the region. Achieving this goal was based on the definition of goals, subjects and objects of ensuring the development of interaction systems, identification of the subject of management. It is proved that the strategic management of the interaction of the subjects of the innovation process should be ensured by goal-setting on a conceptual basis to ensure the value of interaction, which involves the implementation of certain stages.

Summarizing the substantiation of strategic goals for interaction systems development in innovation processes of the region, it is necessary to emphasize harmonization and coordination of goals interaction system formation with goals of innovative development of the region and individual goals of potential participants of interaction systems. After all, the development of interaction systems takes place through the maximum involvement of market stakeholders in cooperation and ensuring the value of their coordinated joint work on innovative projects and programs.

Prospects for further research

It is important to emphasize the need for further research on strategic approaches to the development of interoperability systems. In particular, in this direction it is necessary to develop a system of tools and levers of innovation policy of the region, which will be based on the coordination of the goals of the innovation process of the region and implemented in the direction of strategic goals of innovation development.

1. Стан науково-інноваційної діяльності в Україні у 2020 році: науково-аналітична записка [Електронний ресурс] / Т. В. Писаренко, Т. К. Куранда, Т. К. Кваша та ін. К.: УкрІНТЕІ, 2021. 39 с.
2. Sub-regional Innovation Policy Outlook 2020: Eastern Europe and the South Caucasus/United Nations Publications. URL: <https://shop.un.org>
3. Фінальний звіт. Опитування представників бізнесу щодо інноваційної діяльності та актуальних потреб в R&D/ Міністерство розвитку економіки, торгівлі та сільського господарства України, Міністерством цифрової економіки. URL: <https://mon.gov.ua/storage/app/media/innovatsii-transfer-technology/2020/08/28.08/opituvannya-28-08-2020.pdf>
4. Грінка Т. І., & Красножон Н. С. (2019). Формування регіональної інноваційної політики: оцінка та проблеми реалізації. *Причорноморські економічні студії*, (38 (2)), С. 24–29.
5. Полчанов А. Ю., Захаркіна Л. С. (2020). Аналіз взаємозв'язків результатів фінансової та інвестиційно-інноваційної політики на місцевому рівні. *Вісник Сумського державного університету. Серія: Економіка*, № 1, С. 168–173. DOI: 10.21272/1817-9215.2020.1-19.
6. Ляшенко В. І., Підоричева І. Ю. (2017). Регіональні наукові центри НАН України та МОН України як ядро розбудови регіональних інноваційних систем в умовах децентралізації. *Економічний вісник Донбасу*, № 1 (47), С. 13–20.
7. Колодинський С. Б., Захарченко О. В., & Заєць, М. А. (2020). Управління формуванням регіональної інноваційної інфраструктури. *Ринкова економіка: сучасна теорія і практика управління*, 19(1 (44)), С. 88–101.
8. Кваша, Т. К., & Паладченко, О. Ф. (2017). Регіональні інноваційні пріоритети: проблеми формування та реалізації // XIII (XXV) Всеукраїнська науково-практична конференція “Міжнародне науково-технічне співробітництво: принципи, механізми, ефективність”: Збірник наукових праць (16-17 березня 2017 р., м. Київ), НТУУ “КПІ” – К.: КПІ. – 2017. – С. 56.
9. Єрмакова О. А. (2018). Концептуальні засади стратегування інноваційного розвитку регіонів в умовах глокалізації економічних процесів. *Приазовський економічний вісник: електр. журнал*, С. 331–336.
10. Чухрай Н. І., Лісовська Л. С. (2015). Економіка інноваційного підприємства: навч. посіб. Львів.
11. Дубодєлова А. В., Лісовська Л. С. (2011). Науково-технічний потенціал України: сучасний стан і державні пріоритети розвитку.
12. Морозов В. А. (2014). Економіка взаємодії. *Креативна економіка*, 8 (92), С. 34–49.
13. Пушкарь А. И., Курбатова Ю. Л. (2013). Концептуальный подход к управлению межфирменными взаимоотношениями в цепях поставок. *Економіка розвитку*, 3, С. 55–59.

14. Шматько Н. М. Формування синергетичного ефекту в економіці України. URL: gero.uira.edu.ua/jspui/bitstream/123456789/3376/1/Стаття%2.
15. Акулюшина М. О., & Захарченко В. І. (2012). Визначення рівня інвестиційно-інноваційної привабливості регіону. *Економіка: реалії часу*, (3–4), С. 4–5.
16. Мазій Н. Г., & Войтик О. Є. (2015). Інвестиційно-інноваційна діяльність та регіональні чинники формування привабливості регіонів. *Актуальні проблеми державного управління*, 2 (48).
17. Степаненко С. В. (2012). Інвестиційна привабливість регіонів та інноваційна політика в контексті сталого економічного зростання. *Державне будівництво*, 2.
18. Оксенюк К. І. (2010). Обґрунтування вибору стратегії нарощення потенціалу регіону. *Ефективна економіка*, 4.
19. Яцюк О. С. (2018). Смарт-спеціалізація розвитку регіону як важливий напрям підвищення його конкурентоспроможності та інноваційної активності.
20. Захарченко В. І. (2020). Розвиток інноваційної інфраструктури в контексті неоіндустріалізації України та її регіонів. *Збірник наукових праць Черкаського державного технологічного університету. Серія: Економічні науки*, (56), С. 5–17.

1. Stan naukovo-innovacijnoyi diyal`nosti v Ukrayini u 2020 roci: naukovo-anality`chna zapry`ska [The state of scientific and innovative activity in Ukraine in 2020: scientific and analytical note] [Electronic resource] / T. V. Pisarenko, T. K. Kuranda, T. K. Kvasha and others. K.: UkrINTEI, 2021. 39 p.
2. Sub-regional Innovation Policy Outlook 2020: Eastern Europe and the South Caucasus / United Nations Publications. <https://shop.un.org>
3. Final`ny`j zvit. Opy`tuvannya predstavny`kiv biznesu shhodo innovacijnoyi diyal`nosti ta aktual`ny`x potreb v R&D [Final report. Survey of business representatives on innovation and current needs in R & D] / Ministry of Economic Development, Trade and Agriculture of Ukraine, Ministry of Digital Economy / Access mode: <https://mon.gov.ua/storage/app/media/innovatsii-transfer-tehnologiy/2020/08/28.08/opituvannya-28-08-2020.pdf>
4. Grinka, T. I., & Krasnozhan, N. S. (2019). Formuvannya regional`noyi innovacijnoyi polity`ky`: ocinka ta problemy` realizaciyi [Formation of regional innovation policy: assessment and implementation problems]. *Black Sea Economic Studies*, (38 (2)), pp. 24–29.
5. Polchanov, A. Yu. (2020). Analiz vzayemozv'yazkiv rezul`tativ finansovoyi ta investy`cijno-innovacijnoyi polity`ky` na miscevomu rivni. [Analysis of the relationship between the results of financial and investment-innovation policy at the local level] [Text] / A. Yu. Polchanov, L. S. Zakharkina. *Bulletin of Sumy State University. Economics series*. No. 1. pp. 168–173. DOI: 10.21272 / 1817-9215.2020.1-19.
6. Lyashenko V. I., Pidoricheva I. Yu. (2017). Regional`ni naukovi centry` NAN Ukrayiny` ta MON Ukrayiny` yak yadro rozbudovy` regional`ny`x innovacijny`x sy`stem v umovax decentralizaciyi [Regional research centers of the National Academy of Sciences of Ukraine and the Ministry of Education and Science of Ukraine as the core of development of regional innovation systems in terms of decentralization]. *Economic Bulletin of Donbass*, No. 1 (47), pp. 13–20.
7. Kolodinsky, C. B., Zakharchenko, O. V., & Zayets, M. A. (2020). Upravlinnya formuvanniam regional`noyi innovacijnoyi infrastruktury [Management of the formation of regional innovation infrastructure]. *Market Economy: Modern Theory and Practice of Management*, 19 (1 (44)), pp. 88–101.
8. Kvasha, TK, & Paladchenko, OF (2017). Regional`ni innovacijni priory`tety`: problemy` formuvannya ta realizaciyi` [Regional innovation priorities: problems of formation and implementation]. // XIII (XXV) All-Ukrainian scientific-practical conference “International scientific and technical cooperation: principles, mechanisms, efficiency”: Collection of scientific works (March 16-17, 2017, Kyiv), NTUU “KPI”. – K.: KPI, 2017. – P. 56.
9. Ermakova, O. A. (2018). Konceptual`ni zasady` strateguvannya innovacijnogo rozvy`tku regioniv v umovax glokalizaciyi ekonomichny`x procesiv [Conceptual bases of strategy of innovative development of regions in the conditions of glocalization of economic processes]. *Azov Economic Bulletin: Electronic journal*, pp. 331–336.
10. Chukhray N. I., Lisovskaya L. S. (2015). *Ekonomika innovacijnogo pidpry`yemstva* [Economics of an innovative enterprise]: a textbook.
11. Dubodelova A. V., Lisovska L. S. (2011). Naukovo-texnichny`j potencial Ukrayiny`: suchasny`j stan i derzhavni priory`tety` rozvy`tku [Scientific and technical potential of Ukraine: current status and state development priorities].
12. Morozov V. A. (2014). *Ekonomika vzayemodiyi* [Economics of interaction]. *Creative economy*. 8 (92). S. 34–49.

13. Pushkar, A. I., Kurbatova, Yu. L. (2013). Konceptual'nyj podhod k upravleniju mezhfirmennymi vzaimootnoshenijami v cepjah postavok [Conceptual approach to the management of intercompany relationships in supply chains]. *Development economics*. 3. S. 55–59.
14. Shmatko N. M. Formuvannya sy`nergety`chnogo efektu v ekonomici Ukrayiny` [Formation of a synergistic effect in the economy of Ukraine]. URL: repo.uipa.edu.ua/jspui/bitstream/123456789/3376/1/Article%2.
15. Akulyushina, M. O., & Zakharchenko, V. I. (2012). Vy`znachennya rivnya investy`cijno-innovacijnoyi pry`vably`vosti regionu [Determining the level of investment and innovation attractiveness of the region]. *Economics: the realities of time*, (3–4), 4–5.
16. Mazyi, N. G., & Voytik, O. E. (2015). Investy`cijno-innovacijna diyal`nist` ta regional`ni chy`nny`ky` formuvannya pry`vably`vosti regioniv [Investment and innovation activities and regional factors shaping the attractiveness of regions]. *Current issues of public administration*, (2 (48)).
17. Stepanenko, SV (2012). Investy`cijna pry`vably`vist` regioniv ta innovacijna polity`ka v konteksti stalogo ekonomichnogo zrostantya [Investment attractiveness of regions and innovation policy in the context of sustainable economic growth]. *State building*, (2).
18. Oksenyuk, KI (2010). Obgruntuvannya vy`boru strategiyi naroshhennya potencialu regionu [Rationale for choosing a strategy for building the potential of the region]. *Efficient economy*, (4).
19. Yatsyuk, O. S. (2018). Smart-specializaciya rozvy`tku regionu yak vazhly`vy`j napryam pidvy`shhennya jogo konkurentospromozhnosti ta innovacijnoyi akty`vnosti [Smart specialization of the region's development as an important direction of increasing its competitiveness and innovation activity].
20. Zakharchenko, V. I. (2020). Rozvy`tok innovacijnoyi infrastruktury` v konteksti neoindustrializaciyi Ukrayiny` ta yiyi regioniv [Development of innovation infrastructure in the context of neo-industrialization of Ukraine and its regions]. *Collection of scientific works of Cherkasy State Technological University. Series: Economic Sciences*, (56), 5–17.

Л. С. Лісовська¹, О. Б. Мрихіна², Б. О. Шеремета³, Л. В. Іванець⁴

Національний університет “Львівська політехніка”,

^{1,3} кафедра менеджменту організацій,

² кафедра економіки підприємства та інвестицій,

⁴ Окремий структурний підрозділ “Техніко-економічний професійно-технічний коледж Національного університету “Львівська політехніка”

СТРАТЕГІЧНІ ОРІЄНТИРИ РЕГІОНАЛЬНОГО УПРАВЛІННЯ РОЗВИТКОМ СИСТЕМ ВЗАЄМОДІЇ В ІННОВАЦІЙНИХ ПРОЦЕСАХ РЕГІОНУ

© Лісовська Л. С., Мрихіна О. Б., Шеремета Б. О., Іванець Л. В., 2021

Обґрунтовано стратегічні засади розвитку систем взаємодії в інноваційних процесах регіону, що передбачає визначення цілей на концептуальній основі забезпечення цінності взаємодії, уточнення складу суб'єктів й об'єктів забезпечення розвитку систем регіональної взаємодії, виконання визначених етапів. Доведено, що регіональні інституції влади повинні всебічно підтримувати розбудову економіки на ринкових принципах, взявши на себе головну відповідальність за всеохопне загальне регулювання та стратегічне планування економічного розвитку і безпосередню підтримку інноваційного процесу. Для кожного із зазначених блоків стратегічних цілей у статті обґрунтовано сукупність соціально-економічних інструментів реалізації завдань у системах регіональної взаємодії, які відрізняються складовими систем взаємодії, сферою застосування, характером спрямування, тривалістю дії, комплексністю використання, рівнем узгодженості, цілями використання, джерелом фінансування, напрямом залучення фінансових коштів.

Ключові слова: *інноваційний розвиток; взаємодія; взаємодія у інноваціях; інноваційний процес; дерево цілей; цілі розвитку.*