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Innovative entrepreneurship policy in Ukraine and roadmap strategy

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Abstract

Using an empirically based methodology, the scientific approaches to define the concepts of “innovation” and “innovation policy” are summarized. It is substantiated that the goal of implementing innovative entrepreneurship is the transition to an innovative model of development, which requires the implementation of the following priority tasks: integration of all stages of innovative entrepreneurship in the region; formation of competitive regional innovative products; increasing the level of quality of institutional infrastructure; improvement of information provision of innovative processes; stimulation of regional business entities to ensure innovative activity; creation of communications in the “science-production” system; ensuring quality training of specialists in the field of innovative entrepreneurship; development of knowledge-intensive industries; effective use of innovative potential and intellectual capital of the region. Modeling of the innovative entrepreneurship profile of the regions led to the conclusion that the main task, for each of the regions, is to develop measures to increase the level of formation of its innovative entrepreneurship space, which will have the effect of optimizing the economic results of the operation and increase its competitiveness in domestic and international markets.

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Keywords: innovation space; innovative entrepreneurship; region; innovative activity; socioeconomic development.

Política de emprendimiento innovador en Ucrania y estrategia de hoja de ruta

Resumen

Mediante una metodología de base empírica, se resumen los enfoques científicos para definir los conceptos de «innovación» y «política de innovación». Se fundamenta que el objetivo de implementar el emprendimiento innovador es la transición a un modelo innovador de desarrollo, lo que requiere la implementación de las siguientes tareas prioritarias: integración de todas las etapas del emprendimiento innovador en la región; formación de productos innovadores regionales competitivos; aumentar el nivel de calidad de la infraestructura institucional; mejora de la provisión de información de procesos innovadores; estímulo de las entidades empresariales regionales para asegurar la actividad innovadora; creación de comunicaciones en el sistema «ciencia-producción»; garantizar una formación de calidad de especialistas en el campo del espíritu empresarial innovador; desarrollo de industrias intensivas en conocimiento; uso efectivo del potencial innovador y del capital intelectual de la región. El modelado del perfil innovador de emprendimiento de las regiones permitió llegar a la conclusión de que la tarea principal, para cada una de las regiones, es desarrollar medidas para aumentar el nivel de formación de su espacio empresarial innovador, lo que tendrá el efecto de optimizar los resultados económicos de la operación y aumentar su competitividad en los mercados nacionales e internacionales.

Palabras clave: espacio de innovación; emprendimiento innovador; región; actividad innovadora; desarrollo socioeconómico.

Introduction

In the modern conditions of civilizational development and world globalization realities with post-industrial and industrial methods of production, the quality of management of innovative processes of business entities becomes a determining factor in the competitiveness of national economies. World experience proves that it is innovative entrepreneurship at the stage of its development that becomes the main structure-forming

element of the competitive market environment, an important driving force of the development of the economic system.

Ensuring the appropriate level of development of innovative entrepreneurship in the country makes it possible to increase the level of competitiveness of the economy and contributes to the growth of the country's gross domestic product. Given the role that the innovation sphere should play in the economic system, one of its most important functions from the point of view of ensuring economic growth is the production of innovations.

The importance of activating innovative entrepreneurship is realized by any business entity, because it is new innovative ideas, solutions embodied in a specific product that can provide competitive advantages. However, the active development of innovative entrepreneurship in Ukraine is hindered by a number of factors of the external environment, which affects both the total number of business entities that implement innovations and the effectiveness of their innovative activities.

Among the important factors that restrain the development of innovative entrepreneurship, scientists note the insignificant demand from consumers for innovative products, the insufficient amount of funding for the scientific and technical development of the national economy; limitation of venture financing instruments; imperfect motivation for active innovative activity (Krylova, 2020); high credit rates; imperfection of legislation; high economic risk; lack of demand for products; lack of information about sales markets, etc.

The main reasons for the weak development of innovative entrepreneurship at the regional level are attributed by S. Taran to the unfavorable investment climate for the implementation of innovative entrepreneurship in the region, low innovative activity of regional business entities, the ineffectiveness or absence of programs for the innovative development of the region, insufficient financial support for the development of innovative entrepreneurship in the region, and a low level of integration in the «science-business-government» system, the low level of technological structure of the region's economy (Taran, 2021).

The analysis of the sub-indices of the Global Innovation Index shows that the main obstacles that hinder the development of innovation processes in Ukraine are political instability (123rd place in the world), non-compliance with the rule of law (109), an underdeveloped business environment (104), the complexity of resolving insolvency issues (117), low rate of capital formation (104), unsatisfactory investment (121), slow formation of strategic alliances (113). At the same time, more and more strengths are forming, which contributes to the growth of entrepreneurial innovation: the ease of starting a business (52), the development of school

education (23), the development of higher education (32), the development of Internet services (42), research and development (44) have improved, ease of obtaining credit (34), protection of investors' rights (44), level of trade, competition and market scale (45), level of knowledge of employees (47), high-tech imports (33), creativity of knowledge (23, including return of useful models (1)), impact of knowledge (45), diffusion of knowledge (32), development of the field of intangible assets (23), Internet creativity (39) (Cornell University, INSEAD, and WIPO, 2020).

It should also be emphasized that the full-scale invasion of the occupiers affected various spheres of life in Ukraine, in particular the economy and the functioning of enterprises. Due to the aggression of a neighboring country, more than 50% of businesses on the territory of Ukraine are currently closed, and about 80% of its representatives plan to relocate to safer regions (almost 50% of businesses are closed due to the war).

According to statistics, as of July 2022, business in the east and south of Ukraine is recovering worst from the shock of the war in Ukraine. At the same time, which cannot help but please, more than 35% of enterprises already have a development strategy taking into account the new realities (almost 50% of businesses are out of business due to the war).

We believe that the strategy and road map for the development of entrepreneurship in the regions will contribute to increasing the efficiency of the functioning of the regional socio-economic system, taking into account as a predicted result the priority and irreversibility of the development of innovation-oriented sectors, stimulating the development of other businesses, and contributing to the implementation and increase the export potential of key sectors, the priority of modernization and technical and technological renewal of business structures, development of knowledge-intensive, energy and environmentally efficient, high-tech industries with increasing economic and social impact, which will strengthen the position at the meso and macro levels, expand markets and export potential.

Therefore, the issues of developing not only methodological provisions, but also separate scientific recommendations for the purpose of implementing priority tasks of innovative entrepreneurship at the national and regional level, developing a road map for the development of innovative entrepreneurship in individual regions are currently relevant.

1. Methodology of the study

The methodological basis of the research is the synthesis of the results of fundamental and applied research of domestic and foreign scientists on the problems of the development of innovative entrepreneurship, methods

of theoretical and empirical research. In the research process, a complex of general scientific and special methods was used to substantiate the provisions given in the article, in particular: analysis and synthesis - to compare the main approaches to the interpretation of the concepts and criteria of effective strategizing of innovative entrepreneurship; comparison and grouping - for the systematization of indicators used to evaluate innovative entrepreneurship; graphic method - for visual representation of the results of analytical studies; abstract-logical - for theoretical generalization and formulation of conclusions.

The methods of terminological analysis and theoretical generalization were used to substantiate the theoretical and methodological foundations, the main factors and criteria of effective strategizing of innovative entrepreneurship; analytic-logical method, method of analysis and synthesis - for the selection of modern strategies according to the level of formation of the innovation space and their role in the process of building a road map; graphical method of visualization and method of mathematical modeling - in order to build the value of a potential representative region on the basis of a comprehensive approach to the assessment of the integral indicator of innovativeness and the rating of regions by the level of innovativeness of entrepreneurship.

2. Analysis of recent research

The modern innovative development of various sectors of the economy of Ukraine, individual entrepreneurial structures and households of the country is characterized by unevenness and disproportionality, often acquiring signs of chaotic movement, when significant achievements are combined with subsequent regression. Processes aimed at accelerating innovative development in certain spheres of economic activity are combined with their restraint in others, causing low predictability of possible changes.

In this regard, scientific research related to the determination of directions, principles and conditions necessary for a successful innovative and informative transformation of modern society, which would ensure the growth of the quality of life of the population and the competitiveness of the economic system, is being updated (Zayats, 2021). The investigated problems found their partial solution in the scientific publications of modern scientists O. Didchenko, A. Tkachuk (Didchenko and Tkachuk, 2015), L. Malyuta (Malyuta, 2013), T. Marchenko (Marchenko, 2021), O. Mashtaler (Mashtaler, 2020), D. Ocheretny (Ocheretny, 2017), O. Olshanska (Olshanska *et al.*, 2020), O. Sobko (Sobko *et al.*, 2021), O. Zarichna (Zarichna, 2018), A. Poklonskyi (Poklonskyi *et al.*, 2021).

Therefore, it should be recognized that the development of innovative entrepreneurship is currently in the center of attention of many scientists, because it acts as a catalyst for economic processes in any country, ensures an increase in its export activity, and stimulates the improvement of many spheres of activity at enterprises and in the economic environment of the country. This requires a study of the development of innovative entrepreneurship in Ukraine in order to reveal the factors influencing its position in the global economy.

At the same time, it must be stated that despite a significant number of publications on the activation of innovative entrepreneurship, to a greater extent they relate to the development of small and medium-sized businesses in the field of creation and dissemination of innovations, and in some places they do not take into account the conditions of today, which requires in-depth attention in order to produce them at the regional level and national levels.

Such directions of further research are the identification of factors that prevent the activation of the effectiveness of innovative activities of enterprises and the development of a set of measures to find opportunities to eliminate the main obstacles to the development of innovative business.

The purpose of the study is to analyze trends in the development of innovative entrepreneurship in Ukraine at the state and regional level, to assess and identify reserves for its improvement in order to revive existential processes in the face of modern challenges, to develop proposals for the activation of the development of innovative entrepreneurship in Ukraine, in particular, to analyze and create a model of the dependence of the functioning indicator entrepreneurship of the region and its rating according to the level of internal capabilities to carry out innovative activities and the ability to transform internal capabilities to carry out innovative activities into results.

3. Results and discussion

3.1. Prospects for the implementation of innovative entrepreneurship policy at the state and regional levels in Ukraine

The scientific and technological development of an individual country is determined primarily by its priorities, the means of achieving them, which are measured by the results and scope of their use. When forming guidelines for scientific and technical development to create promising production and technological potential, a significant role is played by the state innovation policy, which is developed within the framework of the national and international development strategy.

The modern market economy requires the performance of a number of basic tasks to increase the country's competitiveness. One of these tasks is the formation of innovation policy. Because, as international experience shows, a balanced national innovation policy contributes to high rates of innovative development.

Given the role that the innovation sphere should play in the economic system, one of its most important functions, from the point of view of ensuring economic growth, is the production of innovations. Innovation is the final result of innovative activity, in the form of a new or improved product or technological process, which is endowed with qualitative advantages in use and design, production, sale, is used in practical activities and has a social advantage. Innovation strategy is a coordinated set of management decisions that affect the innovative activity of the enterprise and have long-term consequences (Didchenko and Tkachuk, 2015).

Innovation policy - state management of the process of creating favorable conditions for innovative activity, the formation of innovative ideas and projects, the construction of scientific and research samples of innovations, their development and promotion to the market. Innovations include the latest equipment and technologies, modern production processes, scientific, organizational, managerial know-how and other novelties (Fedulova, 2006).

Entrepreneurship is characterized by the mandatory presence of an innovative component, whether it is the production of a new product, a change in the portfolio of activities or the establishment of a new enterprise. A new production management system, quality, application of new methods of production organization or new technologies are also innovative moments. In entrepreneurship, it is advisable to consider two main innovative aspects: the actions of the entrepreneur as a carrier and implementer of this function; groundbreaking innovative activity as an entrepreneurial function (Fadeev, 2012).

The legal foundations of Ukraine's innovation policy are contained in the Constitution of Ukraine and the following laws of Ukraine: «On innovative activity», «On investment activity», «On scientific and scientific and technical activity», «On special regime, investment and innovative activity of technological parks) and in other legislative acts regulating social relations in this area. In particular, according to the Law of Ukraine «On Innovative Activities», the main goal of the state innovation policy is to create socio-economic, organizational and legal conditions for the effective reproduction, development and use of the country's scientific and technical potential, ensuring the implementation of modern ecologically clean, safe, energy and resource-saving technologies, production and sale of new types of competitive products (On Innovative Activity: Law Of Ukraine, 2002).

With the aim of implementing the transition to innovative growth, the Decree of the Cabinet of Ministers of Ukraine № 526 dated 10.07.2019 approved the Strategy for the Development of the Sphere of Innovative Activity for the Period Until 2030, which envisages «initiating a communication mechanism of technological platforms where business and the state can become potential customers of innovations : on the one hand, business and the state make an application to solve their problems, and on the other - scientists, students, inventors offer innovative solutions that will be further scaled and become the basis for their own innovative business» (Strategy for the development of the sphere of innovative activity for the period up to 2030, 2019).

The innovative development of Ukraine takes place in complex socio-political and socio-economic conditions of uncertain prospects and instability of its regulatory and legal regulation, which increases the uncertainty of investors in maintaining a stable demand for innovative products or returning investments, producers - in the possibilities of profitable production and sales, consumers - in the ability to take advantage of the innovative product due to its high cost.

It is obvious that the affirmation of the values of innovative development as one of the basic principles by which subjects in economic activity should be guided requires a change from the modern fragmentary format of interaction of the main subjects to a systemic one – with strengthening of aspects of motivation for cooperation, stimulation of innovative activity of business structures, the interest of local authorities and public structures in spreading innovative social practices.

Despite the low international ratings of innovativeness of Ukraine's economy, the population positively perceives activities related to their development, demonstrating openness to science, technology, the latest technologies, readiness to use its results, as well as understanding the importance of innovations for the country's competitiveness in the global space. However, a pessimistic attitude towards transformational changes in the economy, a skeptical assessment of the chosen course, and disbelief in the success of the implemented reforms, mostly related to military aggression on the territory of Ukraine, oppose the establishment of value guidelines for innovative development.

Unfortunately, the key barriers to the spread of innovations in Ukrainian society arise at the stage of forming the relevant directions of state policy, defining its priorities, goals and tasks for the near and distant future. And although every year in the country the circle of subjects involved in innovative activity is constantly growing (public movements also join it), its effectiveness remains low due to the weakness of mechanisms for state stimulation of innovative development and insufficient investment in the field of scientific research.

Thus, the establishment of value guidelines for innovative development goes far beyond the acceptance or non-acceptance of innovative ideas or products of innovative activity. This is a rather wide range of problems, covering the practice of forming state innovation policy, innovative activity of business structures and consumer behavior of households. Ukraine should intensify the formation of the European model of innovative development in order to reduce the significant technological lag (due to wear and tear of fixed assets, high resource intensity of production, personnel losses, low level of innovative activity) and to avoid new waves of systemic crisis of the domestic economy.

The development of effective measures for the activation of innovative entrepreneurship, first of all, requires focusing attention on identifying the strengths and weaknesses of the development of innovative entrepreneurship, as well as opportunities and threats for its activation in Ukraine. In this sense, it is important to assess the existing level of the innovation process, its supply of personnel and financial resources, the level of development of the innovation infrastructure, the establishment of integration relations between the main participants of the innovation process, the effectiveness of innovation activities, the presence of demand for innovative products, etc.

To ensure the further innovative development of entrepreneurship in Ukraine, I. Kryvyovyazyuk recommends the creation of an effective mechanism for activating innovative, scientific and technical potentials and ensuring the possibility of innovative self-development of the country, which involves the implementation of the following strategic tasks: ensuring the priority conditions for the country's innovative development; achieving such a level of quality and innovativeness of the national manufacturer's products that will ensure its high competitiveness on international markets; optimal combination of state management methods, which will take into account the potential opportunities of the innovative sector of the economy of Ukraine; ensuring the formation of favorable conditions for the development of intellectual potential capable of productively carrying out activities in conditions of turbulence of the country's economy; legislative support for innovative development of business entities (Krivovyazyuk, 2021).

It is important to achieve positive results for society thanks to the comprehensive use of all possible influence tools, primarily related to the effective innovation policy of the state. We share the point of view of T. Zayats, that:

It should be formed as a policy of a systemic and long-term nature, based on clearly defined quantitative and qualitative parameters, become a kind of

«locomotive» for the development of socially responsible business structures capable of generating innovative ideas and gradually implementing them (Zayats, 2021: 17).

Thus, we can detail the priorities for the development of innovative entrepreneurship in the region, which include: integration between all stages of innovative entrepreneurship in the region; formation and implementation of competitive regional innovative products; increasing the level of quality of the institutional infrastructure of the region; improvement of information provision of innovative processes; stimulation of regional business entities to ensure innovative activity; creation of communications in the «science-production» system; ensuring quality training of specialists in the field of innovative entrepreneurship; development of knowledge-intensive industries; effective use of the innovative potential and intellectual capital of the region.

3.2. Strategizing the road map of innovative entrepreneurship in Ukraine

Phenomena and processes occurring in socio-economic systems depend on a significant number of factors. As a rule, each factor does not separately determine the phenomenon under study in its entirety. Only a set of factors in their interdependence can give a more complete picture of the nature of the phenomenon.

Socio-economic systems of the regions are characterized by varying degrees of formation of innovative entrepreneurship, which is determined by the action of a significant number of internal and external factors. Influencing these factors can help increase the integrated indicator of the formation of innovative space for the development of entrepreneurship in the region.

Typology of regions according to the formation of innovation space is carried out on two grounds:

1. the achieved value of the integrated rating of the formation of the innovation space of the region;
2. by the place of the region in the integrated rating of the formation of innovation space.

To form the types of regions on the first sign, consider that the lower limit of the interval series is 0, and the upper corresponds to 1, given that all indicators have limits from 0 to 1. For the second sign, to determine the types of regions by place in the integrated rating of the formation of innovation space, based on the most common typology of innovative enterprises, according to which among them there are three types -

leaders in innovative business, followers, and outsiders. The leaders in the innovative entrepreneurial activity are proposed to include the regions that took 1st to 5th place in the ranking, and the outsiders - from 21st to 25th place. All other regions are followers. We believe that it is optimal to group regions using at least 5 types. Thus, 15 follower regions are proposed to be divided into three subtypes.

The expediency of increasing the level of formation of the innovative space of regional entrepreneurship can be established by constructing the dependence of the functioning of the country's regions on the components of the integrated indicator (Dyba *et al.*, 2013) of the formation of Ukraine's innovation space (ranking of region's innovation in the results) (Hromozdova and Stenicheva, 2019).

Given the high reliability of this model, it can be used not only to justify the feasibility of decision-making in the field of innovation of the regions but also to predict the results of their implementation.

Before building an appropriate model, it is necessary to determine which indicator should be used as an indicator to assess the functioning of entrepreneurial activity in the regions of Ukraine. Most often, the gross regional product of the region is used as the main indicator for assessing the functioning of the regions.

However, we believe that this indicator cannot be used to build dependency models, as the comparability of gross regional products of different regions is questionable. Therefore, it is better to use a relative indicator - gross regional product per capita, which more accurately reflects the results of entrepreneurship of individual regions and allows a sufficient degree of objectivity to compare them with each other.

That is why it is advisable to build a model gross regional product dependence per capita in the regions of Ukraine on the indicators: rating internal opportunities for innovation, rating ability to transform internal opportunities for innovation into results, indicator of functioning regions.

Based on the data in the table, we propose to build a correlation-regression model. At the same time, first of all, it is expedient to determine the coefficients of pair correlation, which will allow us to conclude that there is a relationship between performance (Y - gross regional product per person, UAH) and factor indicators (X1 - rating of regions by level of internal opportunities to innovate). Activities, in points, X2 - ranking of regions by the level of ability to transform the internal opportunities for innovation in the results, in points).

Comparing the calculated data with the data of the Shaddock scale, the following conclusions can be made: the most significant influence on the change of the performance indicator is the region's rating on the level

of ability to transform internal opportunities for innovation into results (correlation coefficient equal to 0.761); the relationship between the performance indicator and the ranking of regions by the level of internal opportunities for innovation is also close and direct (the correlation coefficient is equal to 0.756).

Table 1. Pair correlation coefficients

Factor indicator	Correlation coefficient of the performance indicator (Y) with the corresponding factor indicator
rating of regions by the level of internal opportunities for innovation, points (X1)	0,756
ranking of regions by the level of ability to transform internal opportunities for innovation into results, points (X2)	0,761

(Own elaboration).

It should also be determined whether the calculated correlation coefficients are significant, for which they are compared with the critical value of t - Student's t test:

$$t = \frac{r}{\frac{1-r^2}{\sqrt{(n-1)}}}$$

r - is the pair correlation coefficient;

n - is the number of units in the aggregate.

where

The actual and critical values of the student's t-test are presented in table 2.

Table 2. Comparison of actual and critical values of Student's t'-test

Variable number	X1	X2
t-critical	2,074	2,074
t-calculated	8,650	8,873

(Own elaboration).

The table shows that t-critical is less than t-calculated, i.e., the correlation coefficients can be considered significant. Determine the type of relationship between indicators (Hromozdova *et al.*, 2020: 4909 - 4915). To do this, we construct graphs of empirical regression lines.

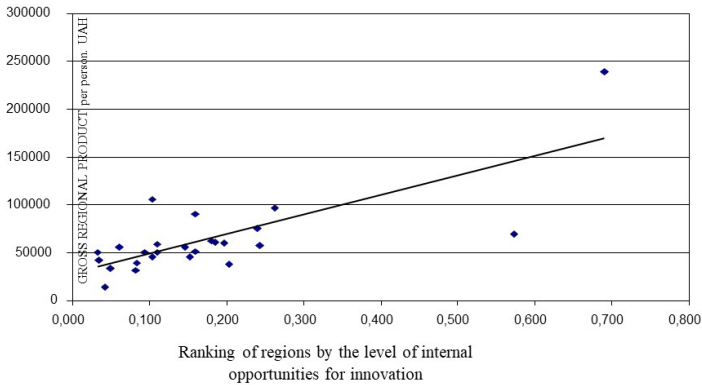


Figure 1. Empirical regression line between gross regional product per capita and the rating of regions by the level of internal opportunities for innovation. (Own elaboration).

As can be seen from the constructed regression line, the relationship between gross regional product per capita and the ranking of regions by the level of internal opportunities for innovation is close to linear

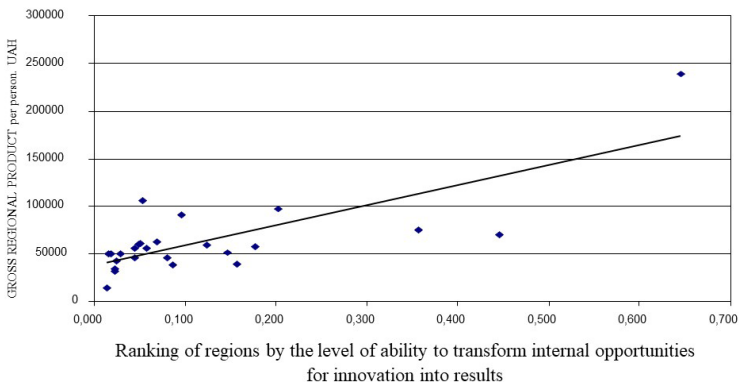


Figure 2. Empirical regression line between gross regional product per capita and the ranking of regions by the level of ability to transform internal opportunities for innovation into results (Own elaboration).

As can be seen from the constructed regression line, the relationship between gross regional product per capita and the ranking of regions by the level of ability to transform internal opportunities for innovation in the results can also be represented by the dependence of the linear type.

Therefore, this connection can be represented as follows:

$$Y = a_0 + a_1X_1 + a_2X_2$$

Using the method of correlation-regression analysis, we find the parameters of the regression equation (Bludova *et al.*, 2019). The constructed dependency function will look like:

$$Y = 31881,6 + 98914,713X_1 + 117620,697X_2$$

This model was tested for adequacy using Fisher's test. The actual value of F - Fisher's test, obtained as a result of calculations, is 16.57, while its tabular value is 3.4 at $K_1 = 25-2-1 = 22$ and $K_2 = 2$, ie ($F_{\text{roz.}} > F_{\text{tab}}$), which means that the regression equation is adequate to reality.

The coefficient of multiple correlations according to the constructed research model is 0.775, which indicates a close relationship between performance and factor indicators.

Thus, the constructed dependence model can be used for further research. At the same time, taking into account the results of its construction, it can be argued that the indicators that reflect the formation of the innovation space have a significant impact on the performance of the regions.

That is why the development of measures to increase the level of formation of its innovative business space, which will have the effect of improving the performance of the region, can be considered a priority for each of the regions.

Such measures can be reflected in the roadmap for the formation of innovative entrepreneurship in the regions.

Unfortunately, traditional approaches to identifying and solving problems often remain stereotypical: the problem is considered without a need's assessment.

Ukraine is actively reforming the decentralization of power. Territorial communities receive greater financial and managerial powers. This allows them to independently plan policy, development, resource allocation, and respond to existing problems. At the same time, the received powers must contribute as much as possible to the fulfillment of responsibilities

for ensuring the principles of sustainable development. This possibility of coordination is provided by the development and implementation of a modern strategic document - a road map.

This document should be agreed upon within the Strategist 4.0 expert community and intended for business leaders, as well as Industry 4.0 innovators and other stakeholders involved in shaping the innovation space of the region's socio-economic system. According to the official data of regional road maps, the formation of innovative entrepreneurship in Ukraine does not exist.

The result of creating a road map is an appropriate scenario of the process or the implementation of certain measures, taking into account all the requirements, restrictions, risks, deadlines, and alternatives. The issue of construction and application of road maps is considered in more depth in the works of foreign scientists and practitioners.

In general, the road map is a medium- or long-term plan for the development of any socio-economic process (Farrukh *et al.*, 2001). This strategic planning tool is fairly new. The first road maps were developed in the United States in the 1970s by large industrial corporations - Motorola and Corning and were a simple but effective method of planning certain areas of future development of corporations, which allowed to link strategic and operational objectives, adjust global the purpose of management and to establish the necessary resources to achieve it.

A positive aspect of the roadmaps was the ability to identify the performers responsible for certain activities reflected in the roadmap. Subsequently, road maps began to be used in the field of public administration of economic policy. Thus, in 1970–1981, road maps were first used in the United States to gradually deregulate some of the country's industries, to reduce government spending and inflation.

The development of tools for the public administration of economic development and industry in the world has led to the improvement of road maps on an in-depth scientific basis. Today, the scientific literature presents a variety of approaches to defining the essence of the concept of "road map", which are mainly based on a comprehensive approach that combines the achievements of economics, management of mathematical modeling, and forecasting.

In general, most authors emphasize such features of road maps as the definition of goals for each direction of the map; the need to form development priorities; the need to justify development scenarios; building communication links between processes within the map.

With the development of the theory of strategic management and the improvement of approaches to planning and forecasting socio-economic

processes in the regions, road maps have taken a special place among the innovative tools of regional management.

It should be noted that in the context of this study, the road map combines these two functions and is a list of goals and key tasks to create innovative space regions of Ukraine for the next five years. It can also be part of the Strategy for the Development of the National Innovation System and an action plan for the formation of innovative business space on both the meso and macro levels, as well as a document aimed at implementing common priorities.

Given the lack of available financial resources to conduct large-scale reform of the national scientific and technological systems required is the development strategy of interaction research infrastructures and industry.

Lack of demand from the national economy in the medium term for the formation of innovation space, you can use the roadmap for the formation of innovative entrepreneurship in the region as a ready business plan with indicators to monitor its implementation to receive technological assistance from donors in Ukraine. The roadmap for the formation of innovative entrepreneurship in the region is based on the principles of interactivity, which provides for the possibility of making adjustments at any stage of the map in any indicator.

The construction of the roadmap for the formation of innovative business space in the region was based on the definition of priority goals for the development of the region, as well as the stimulation of specific joint actions and projects aimed at improving the results of innovation.

Involving Ukrainian business in the Single Market can create a corresponding demand from national and European business to science for scientific support of the formation of innovative business space of the regions and the solution of common social problems.

Recommendations for inclusion in the road map:

- formation of a permanent working group on the formation of innovative entrepreneurship in the region;
- creation of a coordination committee between managers of public funds by agreeing on pooling financial, organizational, and human resources to achieve a common goal;
- implementation of a mechanism to promote the development of technologies for sustainable development in terms of forming the agenda and holding an annual forum for the implementation of measures for the formation of innovative entrepreneurship in the region;

- creation of a joint international fund with donors of Ukraine for the formation of innovative entrepreneurship in the region and its key indicators.

Roadmap for the formation of innovative business space:

Step 1: Gather enough information.

Accordingly, the first step includes (depending on local characteristics) a quantitative study of the formation of innovative business space in the region.

The authors conducted a comprehensive study of the regions of Ukraine on the level of formation of the innovation space. On this basis, a working hypothesis was formed, namely - for the formation of innovative business space of the socio-economic system of the region it is necessary to identify strengths and weaknesses of the region in the field of innovative entrepreneurship, their opportunities, and threats, to build a matrix for diagnosing strengths taking into account the interdependence of indicators that reflect the formation of innovative business space, confirmed by the results of modeling, and the results of the functioning of the regions as a whole. A questionnaire was formed to identify priorities and identified risks of mainly methodological and methodological nature.

Step 2: to establish the joint work of the public, representatives of local governments, businesses.

Developing a vision for the innovation space of the regions.

A vision is an idea of the image of the future. Developing a vision is one of the steps to create a roadmap for the formation of an innovative business space of the socio-economic system of the region as a strategic document. Relevant foresight studies of innovation activities and certified strategic programs of regional development research can be additional documents.

Risks: passivity of participants.

Step 3: Develop an action strategy to expand the innovation space of the regions or their integration to obtain a synergistic effect.

Monitoring the status of implementation of the developmental steps is one of the sections of the Strategy, which is described in detail in a specific document. For effective monitoring, it is necessary to create a monitoring group with the participation of government officials and the public, as they are the main actors in the process of forming an innovative business space. Provide for the definition of “nodes” and indicators for assessing the implementation of the process of formation of innovative entrepreneurship and the appropriate system of control over its implementation.

According to the built model, the road map provides an opportunity to increase the rate of innovation entrepreneurship and as a result of the implementation of the measures envisaged in it - an increase in gross regional product and Ukraine's position in international rankings of innovations and more.

It is established that for the Mykolaiv area which is chosen as the representative region of a cluster and, the important feature of innovation space is its big territorial disparities. Practically all research and design institutions are located in Mykolayiv. The main problems that need to be addressed include:

- insufficient efficiency of the existing innovation infrastructure facilities in the region;
- low level of interaction and cooperation between the subjects of innovation, including regional and local authorities;
- lack of innovation structures in the field, which provide 100 innovators with several specialized services for the development, promotion, prototyping, innovation, etc.;
- the level of interaction between enterprises and research institutions is insufficient for qualitative structural changes in the region's economy.
- Given the main problems that hinder the development of the scientific and technological potential of economic transformations in the region, the main directions of joint efforts soon should be:
 - development of a modern research base and infrastructure for technology transfer in scientific institutions and free economic zones;
 - creation of infrastructure of industrial parks and techno parks for scientists and business;
 - introduction of an effective mechanism of the mutually beneficial partnership of the triple spiral "power-business-science";
 - creation of centers of innovations and technology transfer; innovation centers; experimental zones and laboratories, centers for increasing productivity and technology transfer, innovative venture funds; centers for commercialization of intellectual property rights, etc.;
- development and implementation of the Program of scientific, technical, and innovative development of the region; creation of innovative and creative clusters in the region.

The basic strategic priority within the road map of the Mykolaiv area is the development of innovation-oriented sectors of the economy, which will give a push for the development of other spheres, and also will promote the realization of export potential of key sectors of the economy, modernization and technical and technological re-equipment of industrial enterprises, high-tech industrial productions with the growing economic and social return, expansion of the markets for the production of domestic manufacturers.

Assessing the research and innovation potential of the region in terms of types and subtypes of economic activity, taking into account the potential of related industries, it is determined that the basis for innovation space can form such economic activities as processing fruits and vegetables and baby food based on eco-technologies; development of the aqua industry; mechanical engineering, including shipbuilding. These areas are relevant to achieving the goals of sustainable development, facilitating the transition to a resource-saving economy, creating competitive advantages in domestic and foreign markets; supporting structural change, offering new and better jobs, and social innovation.

The formation of an innovative business space makes it possible to unlock the regional potential for structural and technological change, as well as for industrial modernization on an innovative basis. The growth of the role of innovation will be achieved through the development of innovation-oriented sectors of the economy. Achieving the strategic goal is expected through the implementation of innovative projects.

The following innovative projects are included in the road map for the Mykolaiv area:

Table 3. Innovative projects on the road map of the Mykolaiv area

Project	Expected costs and results
Development of the Innovation Cluster “RInnoHUB”	Stimulating the development of innovation infrastructure and supporting innovation activities (UAH 5,000 thousand - UAH 12,000 thousand)
Economic and social business is an incubator for OTG	Entrepreneurship support (UAH 3,600,000 - UAH 6,000 thousand)
Incubator for starting a business in the field of aquaculture (AQUABATOR)	Stimulating the development of innovation infrastructure and supporting innovation activities (UAH 5,000 thousand - UAH 12,000 thousand)

Support for the institutional development of the Maritime Cluster of Ukraine	Entrepreneurship support (UAH 3,600,000 - UAH 6,000 thousand)
Modern irrigation is the basis of innovative development of agricultural production of the Mykolaiv area	Stimulating the development of innovation infrastructure and supporting innovation activities (UAH 5,000 thousand - UAH 12,000 thousand)
Construction of the industrial park "New Bug" in the territory of the Novobuzhsky city council of Mykolaiv area	Stimulating the development of industrial investment (UAH 12,000 thousand - UAH 48,000 thousand)
Construction of Berezan industrial park in Berezanskaya OTG of the Mykolaiv area.	Stimulating the development of industrial investment (12000 thousand UAH - 48000 thousand UAH)

(Own elaboration).

Monitoring of the achievement of the strategic vision will be based on control over the implementation of strategic goals. The main quantitative indicators for each strategic goal for the monitoring period will be the indicators arising from the list of projects to be implemented.

Expected results - gross regional product (in actual prices) per capita 70,336 thousand UAH and approaching the regional level to the national average, while maintaining the growth trend of gross regional product per capita - not less than 75%. Differentiation of gross regional product per capita (ratio to the average in Ukraine) by 0.83% approaching the level of the region to the level of the national average.

According to the built model, the road map provides an opportunity to increase the indicator of innovation space and as a result of the implementation of the measures envisaged in it - an increase in gross regional product and Ukraine's position in international innovation rankings, etc.

Conclusions

Therefore, at the national level, the state should become a catalyst of the innovation process and a reliable assistant for subjects of innovation activity, it is necessary to create and implement an economic model of innovation activity, which would be based on clear economic criteria of high efficiency at all stages of the innovation system, from fundamental research and development to production development. Orientation to an innovative path of development requires the subjects of economic activity to rebuild the management system, to create, based on marketing principles, a

system of operational search for new areas and ways of realizing one's own potential based on new products, technologies, methods of production and sales organization. Fulfillment of the above conditions and awareness of the importance of innovative transformations by business entities, interest in the implementation of a complex of investment and innovative ideas, will ensure the competitiveness of Ukrainian products on the world market, ensure the strengthening of the potential of business entities and contribute to sustainable economic growth of the Ukrainian economy.

The priority directions for the development of innovative entrepreneurship in the region include: integration between all stages of innovative entrepreneurship in the region; formation and implementation of competitive regional innovative products; increasing the level of quality of the institutional infrastructure of the region; improvement of information provision of innovative processes; stimulation of regional business entities to ensure innovative activity; creation of communications in the «science-production» system; ensuring quality training of specialists in the field of innovative entrepreneurship; development of knowledge-intensive industries; effective use of the innovative potential and intellectual capital of the region.

A scale for determining the point assessment of opportunities and a scale of threats to the formation of an innovative space have been created. The general view of the profile of the region according to the formation of the innovation space was considered. It is substantiated that, taking into account the fact that the most typical is the situation in which the formation of the innovation space of the region is at a critical level, it is advisable to build the innovation profile of the region for the region, which is a typical representative of this cluster.

An innovation profile of the regions of Ukraine for 2019 was built, which made it possible to determine that Mykolaiv region can be considered the most typical (representative) representative of this cluster, since the quadratic deviation of the integral rating of the formation of the innovation space here is minimal and amounts to only 0.002 points. Its innovative profile was built precisely for this representative region.

The basic strategic priority in the framework of the road map of the Mykolaiv region is the development of innovation-oriented sectors of the economy, which will provide an impetus for the development of other areas, as well as contribute to the realization of the export potential of key sectors of the economy, the modernization and technical-technological re-equipment of industrial enterprises, the development of knowledge-intensive, energy- and ecologically efficient and high-tech industrial productions with growing economic and social returns, expansion of sales markets for the products of domestic manufacturers.

Evaluating the research and innovation potential of the Mykolaiv region in terms of types and subtypes of economic activity, taking into account the potential of adjacent industries, it was determined that the following types of economic activity can form the basis for an innovative space: processing of fruits and vegetables and production of baby food based on eco-technologies; development of aqua industry; mechanical engineering, including shipbuilding.

These directions are relevant for achieving the goals of sustainable development, contribute to the transition to a resource-saving economy, create competitive advantages in domestic and foreign markets; support structural change by offering new and better jobs and social innovation.

The modeling of the innovative profile of entrepreneurship of the regions of Ukraine made it possible to come to the conclusion that the primary task for each of the regions is to develop measures to increase the level of formation of its innovative entrepreneurial space, which will have the effect of improving the economic results of the operation of this region and increasing its competitiveness on national and international markets.

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