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**STRATEGIC MANAGEMENT OF INNOVATIVE DEVELOPMENT  
OF BUSINESS ENTITIES**

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**Abstract.** *Scientific and methodological bases for formation and selection of an innovative strategy for development of business entities, based on complex diagnostics of external and internal environments, grouping and development of methodology, the basis of which is a system of quantitative indicators and peer review, are substantiated. The system of indicators includes indicators for assessing the level of innovation intensity of business entities (with division by cost of innovation activity, results and pace of innovation activity), strategic innovation potential (with division into internal (production, technological, personnel, information, financial, scientific, technical, managerial, organizational and marketing potentials, innovation culture) and external components), risks of innovation activity, technical capital of business entities. In order to solve the main strategic and innovative problems in case of formation of an innovative strategy of business entities, scientific and methodological provisions have been developed to form an optimal strategy for production of innovative goods by business entities on the basis of economic and mathematical modeling.*

**Keywords:** *innovative activity, strategy, potential, technical capital, development.*

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## **Introduction**

Prospects for the country's development in the world economy are conditioned by competitiveness of the national economy. Deepening of globalization processes, actualization of competitive rivalry, formation of competitive advantages creates new requirements for the state policy in the direction of increasing and creation of conditions for ensuring competitiveness of business entities.

Sustainable economic development in the long term period is primarily caused by introduction of foreign experience of innovation activities of highly developed countries, action of factors aimed at supporting mastering advanced technology and science. Innovative factors are decisive in the system of improving competitiveness of the country's economy and serve acceleration, permanence of the innovation process and development, the efficiency of the innovation system.

Search for new driving forces accelerating economic dynamics, adequate to the current state of development of the world economy, has become a permanent task of today, which is, first of all, related to exhaustion of factors of extensive economic development. Such situation initiates formation of an innovation strategy at all levels of management, which will become an effective tool for developing and implementing a system of improving competitiveness of the country's economy to stimulate its innovative and socio-economic development. This substantiates the relevance of developing theoretical and methodological bases for formation of the innovative strategies, taking into account factors, levers and tools for enhancing competitiveness of the national economy, regulation of innovation development processes.

In the current conditions of development of the world economy, business entities should in the overall development strategy bring innovative development (fulfilment of innovations) to the main, general line, since the strategy is based on a complex of innovations, their complex application in the socio-economic, management, and technology spheres, etc. Innovative development should be the most important strategic goal of organizations, not just a functional direction or objective, but strategic management of innovation development to grow into a promising direction and take into account peculiarities of business entities in an unstable external environment.

The purpose of the research is to formulate theoretical and methodological bases for creation of innovative strategies in the system of enhancing competitiveness of the national economy in modern conditions and to develop scientific and practical recommendations for strategic management of innovative development at all levels of management.

## **Literature Review**

The need to strengthen the role of innovation as a fundamental factor in competitiveness stems from the following provisions:

innovations contain an element of novelty and change, are of dynamic nature and tend to development (Kianto, A., Sáenz, J., & Aramburu, N. (2017));

innovation is closely linked to all other factors affecting competitiveness of a product, enterprise, region and country (Clauss, T. (2017));

innovations influence formation of market demand, which in itself is a very important factor in improving competitiveness (Lee, K., Woo, H. G., & Joshi, K. (2017)).

The main feature of the innovation strategy is combination of two directions of influence, former aiming at the international environment and contributes to improving competitiveness of the country among other players on the world market, and the latter – to ensure internal optimization of the national economy.

At all levels of the national economy and governance (macro, meso, micro) the innovation strategy is characterized by its uniqueness (França, C. L., Broman, G., Robèrt, K. H., Basile, G., & Trygg, L. (2017)).

At the macro level, it is combined with introduction of new equipment and technology, emergence of new types of intellectual activity, emergence of mostly radical, breakthrough innovations (Kasemsap, K. (2017)). At the meso and micro levels, consolidation is emerging with the overall strategy of the business entities, degree of their innovative activity, their ability or willingness for innovations, innovative development, changes.

An innovation strategy is characterized by a set of actions that are geared towards enhancing vitality and competitiveness of entities (Voegtlin, C., & Scherer, A. G. (2017)). Its formation and choice are the most important components of the strategic and innovation management cycle.

Worldwide innovation experience enables identification of several models of new knowledge provision and the choice of an appropriate innovation strategy:

diffusion of innovations from external sources and their improvement in the national conditions (the model is predominant if the "transfer" strategy is implemented) (Baumgartner, R. J., & Rauter, R. (2017));

inflow of new knowledge through foreign expansion and convergence with transnational structures, development of foreign branches in the country, consolidation with the foreign market, transnationalization and globalization of activities (the model is actively used in the case of the "borrowing" strategy implementation) (West, J., & Bogers, M. (2017));

development of an innovative environment at the expense of own potential, integrated with high-tech companies, which creates prerequisites for intensification of the national science and technological progress (the model is prevailing in case of implementation of the "escalation" strategy) (Bouncken, R. B., Fredrich, V., Ritala, P., & Kraus, S. (2018)).

The country should be interested in enhancing its own competitiveness through creation and implementation of an innovation strategy through formation of an innovative environment, stimulation of innovative activity of entrepreneurship, investment in innovation, formation and activation of the system increasing the economy competitiveness, development of innovative activities of enterprises, in

particular production of high-tech products (Santoro, G., Ferraris, A., Giacosa, E., & Giovando, G. (2018), Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018)).

In an innovative economy, economic growth is due to individualization of the process of production of goods and its consumption, the economic efficiency is obtained through the maximum return on the lowest costs in the process of use of limited production resources, and economic freedom is manifested as a high degree of freedom to manage innovative business activities, employees, etc. (Coccia, M. (2017)).

Optimal achievement of economic security (enhancement of innovation potential through division and cooperation of labor) and constant reduction of prices for innovative products are the primary goals of social development and innovation economy. (Gutierrez-Gutierrez, L. J., Barrales-Molina, V., & Kaynak, H. (2018)).

As of now, a strong theoretical framework has been created to analyze the tools for enhancing competitiveness of national economies and the place and the role of innovative strategies. However, many aspects of this problem have not been developed enough. In particular, it remains debatable and requires further study for interpretation of the system of improving competitiveness of the country's economy, theoretical and methodological foundations of mutual harmonization of formation of innovative strategies at different levels of the national economy in the system of improving competitiveness of the national economy have not been created. The relevance, theoretical and practical significance of these problems, insufficient level of their study and theoretical and methodological development have determined the choice of the topic of work, the logic and sequence of scientific research.

## **Methods**

The theoretical and methodological basis of the research are works of the classics of competitiveness theory, strategic management of innovative development, state regulation of innovative activity, modern concepts of innovative development.

In order to solve the problems of scientific research, general scientific theoretical methods have been applied: generalization, explanation, grouping, classification – to analyze the views of economists with regard to the object of research and to formulate conclusions of the content analysis of the primary sources; analysis and synthesis – to clarify the main scientific categories of research, justification of new concepts and categories, laws, principles in case of solving research problems; schematic and graphical representation – for a visual presentation of the study results and analytical data.

In the process of solving problems of the research, special methods of scientific cognition were also used: formal and logical – to develop a methodology for choosing an innovative strategy for business entities, to determine factors influencing competitiveness of the economy; comparison, comparative analysis; economic and mathematical modeling – to develop an optimal innovation strategy for fabrication of innovative products by business entities; peer review – to identify problems, factors and obstacles to the innovative development of business entities, the weight of evaluation criteria, and selection of innovative strategies for business entities.

Processing of the obtained data was performed with the use of modern information technologies.

## **Results**

Any business entity by nature is endowed with the gift of finding something new, original, which makes it possible to stand out from other entities. However, not all manage to realize such natural advantages. There are usually certain obstacles in the way. In order to increase efficiency of innovation activity and implement the innovation strategy, it is necessary to study in depth the structure and nature of the obstacles to innovation development.

Deficiencies in the innovation activity and innovation development of business entities can usually take the following forms:

- loss of opportunity to generate revenue from the introduction and use of innovation, since potentially effective innovations are not implemented by business entities for various reasons;

- dawdling implementation of innovation, delays in development, production, etc.;

- improper organizational implementation of innovation impedes the process of finding and implementing innovation;

- ineffective change management by business entities, and the inability to struggle the change resistance;

- lack of expected innovation potential;

- emergence of unexpected costs to implement innovations that exceed planned costs, etc.

Strategic management of innovative development of business entities is designed to solve the issues of planning and implementation of innovative, investment projects, deals with the process of anticipation of changes in the economic activity of organizations, search and implementation of large-scale strategic decisions that ensure survival and sustainable development at the expense of identified future factors of success.

Getting effective results from implementation of innovative development requires introduction of specific means and management tools from a set of strategic or innovative management, depending on what position is considered innovative development at the micro level. Innovative management is carried out in parallel with the management of the traditional process of production of goods and services.

Formation, planning and organization of an innovation strategy takes place simultaneously or consistently at several levels of strategic management. For the most part, this process takes place at the following levels: corporate, business units, functional (Table 1).

Innovation strategy is of diffusion nature and it integrates into all strategies of the business entities in the strategic set, from corporate to operational. This strategy implies purposeful activity on setting priorities of strategic innovative development, their achievement, and, as a consequence - ensuring new quality of management, production.



**Table 1. Characterization of levels of strategic management on an innovative basis (author's development)**

Levels of classic strategic management	Levels of strategic management on an innovative basis
Level 1. Corporate strategy	Level 1. Corporate innovation strategy
Sets guidelines for development of business entities in general, including innovative development, behavior of business units (subunits). The entity is perceived as a holistic system, defining the line of business, including expansion or reduction of the existing type of activity, merger, setting up joint ventures, etc.	Sets targets mostly for innovative development, behavior of business units (subunits) based on introduction of new ideas. Creation of a new business model, acquisition of a new business, making innovative decisions to address issues related to organizational and financial structure of the economic entity.
Level 2. Business strategy	Level 2. Business innovation strategy
For the most part, this level is characterized by features of competitive strategy. Addresses issues of technology modernization; financing of business activities; holding a market niche, etc.	Addresses issues of formation of competitive advantages; new range and type of products; application of the latest technological processes; capturing a new market niche, etc. Strategic goals are focused primarily on the competitive struggle using various types of innovations
Level 3. Functional strategies	Level 3. Functional strategies
Functional level at which preconditions are formed and conditions are created for solving strategic tasks: sharing responsibilities between departments and units; an action plan in the field of marketing, sales, production, etc.; staff development; production process automation, etc.	Functional level at which preconditions are formed and conditions are created for solving strategic tasks: action plan for R&D, marketing, sales, production, etc.; staff development; production process automation; introduction of a new information system, etc.

At the same time, achievement of priorities has some limitations, due to innovative potential of the activity. This strategy is implemented through non-standard, advanced, well-grounded decisions that are tailored to the specifics of business entities. The content of the innovation strategy depends on the specifics of the innovation activity of the business entities, relationship between functional strategies, innovative corporate strategy and business strategies.

Quality of the relationship between the specialized units, the intensity of this interaction produce a significant impact on the content and results of the innovation strategy. Responsibility for strategy implementation, development of business entities rests with the top managers, whose task is to identify managerial capabilities for conditions of functioning and progress of the organization, regular improvement of managerial talents, setting goals, extent of the required management training and identification of necessary resources.

Introduction of innovation in one area influences other areas of activity of business entities and leads to introduction of innovation in those areas too. All types of innovation are interconnected and can be implemented in parallel and sequentially.

**Table 2. Functional strategies with innovation components (author's development)**

Resource feature	Strategic objectives	Strategic guidelines	Functional strategies aimed at innovations
Marketing	Maintaining and expanding products demand	Increase in sales' growth rate. Market share retention. Expanding market share.	Product stewardship strategy (launch of new products). Price strategy (new pricing methods). Market strategy (maintaining the old markets, entering new ones, expanding borders).
Scientific and technical	Improvement of scientific, technical and organizational level of production	Increasing the share of new information technologies. Increasing the level of standardization, robotization, automation of production processes. Increasing the share of new technological processes. Increasing the number of scientific and technical publications. Increasing the number of intellectual property rights.	Scientific development strategy. Technical development strategy. Technology development strategy Strategy of information and analytical development. Product Development Strategy. Integration strategy. Diversification strategy.
Intangible	Increasing profitability of the organization	Creating a brand and increasing its value. Creating a trademark and increasing its value. Creation of patents, know-how. Goodwill formation. Gaining experience, staff training.	Brand development strategy. Trademark development strategy. Intellectual Product Development Strategy. Know-how, patents development strategy. Goodwill development strategy. Staff development strategy.
Production	Increasing efficiency of production or operating activities	Increase of financial return. Reduction of material consumption of products. Labor productivity growth. Improving product quality. Increase in profitability of production or operating activities. Cost reduction per 1 UAH of commercial products. Increasing production flexibility. Formation of quality management system.	Strategy of production activity diversification. Strategy for optimization of production structure. Strategy of technical and technological development. Resource optimization strategy. Inappropriate costs reduction strategy. Quality management strategy.
HR	Professional development, staff mobility	Salary growth. Improving working conditions. Improvement of employees' wellness. Team building.	Staff development strategy, training. Staff structure optimization strategy. Social orientation strategy. Communication development strategy.
Economics	Improving efficiency and effectiveness of the activity	Reducing the payback period of investments. Increase in sales. Reducing the cost of production. Increasing profits from innovation. Increasing the value of the organization.	Investment strategy. Pricing strategy. Cost optimization strategy. Product development strategy. Goodwill development strategy.
Finance	Improving efficiency of financial management	Maximizing cash flow. Improving return on assets. Improving return on equity. Cost minimization.	Strategy of generating financial resources. Strategy of financial security of business entities. Strategy for improving quality of financial management.
Information	Improving information, analytical and communication support	Increasing the level of IT penetration and automation. Improving the socio-psychological climate. Improving the document flow.	Strategy of information and analytical development. Communication development strategy.

Thus, synchronous implementation of innovations and innovation strategies at all levels enables business entities to simultaneously focus on reducing costs, improving efficiency and quality of products, meeting consumer needs in greater extent, etc. Innovative strategies make it possible to gain a competitive advantage and increase competitiveness of business entities in case managers aim at creative, innovative activity, confronting the established traditions in management.

An innovative corporate strategy influences creation of functional strategies that will focus on innovations (Table 2).

Each functional department of business entities operates in accordance with the strategic goals of innovation development and strategic indicators (benchmarks). Strategic guidelines for assessing the objectives (goals) of business entities should meet the following requirements: time limitations; measurability (quantitative or qualitative), real, clearly formulated, communicated to each employee of the organizational unit; complement each other. Also, a strategic indicator can be among the key indicators in several structural units (functional units) and can be used to evaluate approximation to goals and objectives.

Businesses entities possess more or less similar set of resources that can be used to achieve the intended goals. It is the well-tuned and effective strategic innovation management system of business entities that reflects the ability of the management to optimally, rationally, efficiently and successfully use the available resources, implement changes, innovations.

Development of an organization's innovation strategy should be based on the theory of the life cycle of a business entity and take into account its position on the market, innovation policy. For this purpose, it is important to consider the available resource base (economic, marketing, scientific, design, technological, production, personnel, intangible, financial, information and communication, etc.) and its usability.

External and internal factors of influence should also be taken into account, in particular: the scope activities of business entities; prerequisites, conditions and factors of the external and internal environment; range of goods manufactured by economic entities; product life cycle; the level of risk involved in the project implementation and diversification; generation of technological, scientific and technical, innovative potentials; development of innovative growth strategy and implementation with corporate (general) strategy of organization development; availability of resources and other factors to implement the innovative strategy of business entities; tracking scientific and technical information and the state of the innovation market.

Intensity of innovation activity (process) of business entities – use of resources involved in the innovation activity (process) of business entities. Intensity of innovation activity is a component of innovation activity which is aimed at acquisition, creation, development, realization of innovations in certain spheres of activity of economic entities due to managerial influences and implemented functions that have different efficiency and intensity. At the same time efficiency of the innovation activity (process) of business entities is the level of innovative



development of a certain sphere or business entities in general in accordance with the set goals and shows in development of the innovative potential.

Innovation intensity of business entities is the main feature of their innovation activity level.

Innovation activities of business entities can, for the most part, cover at the same time a number of areas: technology, products, marketing, organizational innovations, innovations in business models that are grouped together. Study of interconnected, integrated innovation processes within groups (complex of innovations) allows the business entities to maintain balance in case of developing different spheres of innovation activity, to focus on the rapid progress of one of the main directions for business entities in order to achieve the synergy effect that is created in the parallel movement of the whole complex of innovations. It also enables to take into account synchronization of the priorities of the interchangeable and dependent development of the spheres of activity in terms of intensity, depth and relative to created conditions for cross-functional interactions within the innovation complex.

It is proposed to assess the level of innovation activity of business entities through calculation of indicators of innovation activity intensity in the following groups: indicators of costs of innovation activity, indicators of innovation activity, indicators of pace of innovation activity.

This research can be conducted by the method of peer review, application of which requires development of a map of indicators for each group (with calculation method) and establishing rankings of significance of certain types of indicators to determine the level of innovation intensity of business entities.

Calculation of the level of innovation intensity of business entities is proposed to analyze in accordance with the available indicators of innovation activity and to evaluate with indicators of the base period of activity of the investigated business entities or their degree of deviation from the normative (in case of starting activity).

It is proposed to estimate the prospects for assessing level of the selected indicators of innovation activity intensity of business entities by the expert method. Experts can be managers, leading specialists of financial, economic, human resources, marketing, scientific and technical departments. For the purpose of the expert evaluation it is necessary to use the method of scoring from 1 to 10.

The table of interpretation of the received value of the level of intensity of innovation activity, in which the 5-level system is used as a basis for evaluation and the criteria are laid down, is given below (Table 3).

The summary estimates for each group were obtained through the synthesis of individual estimates belonging to the respective group (innovation cost indicators, innovation performance indicators, innovation activity rate indicators), and the integral indicator was obtained through synthesis of summary estimates based on the average evaluation. Weighted average scores should be calculated in such a way as to take into account the weights, namely the degree of impact of each assessment group through the peer review method.

**Table 3. Interpretation of results of estimation of intensity of innovative activity of business entities (author's development)**

No.	Level of innovation intensity	Value of the integral indicator
1	High	(0.8-1]
2	Upper intermediate	(0.6-0.8]
3	Intermediate	(0.4-0.6]
4	Lower intermediate	(0.2-0.4]
5	Low	[0-0.2]

Choice of the innovation strategy depends on the evaluation results for each component considered: the level of innovation activity intensity, the level of innovation potential, the risk level of innovation activity and the value of the intangible component of technological capital of business entities. The indicators and the scale for selection of innovative strategy of business entities developed on basis of scientific works are shown in Table 4.

**Table 4. The indicators and the scale for selection of innovative strategy of business entities (author's development)**

Active generator strategy $I_{LII} \rightarrow \max; \max$ $I_{LSIP} \rightarrow \max; \max$ $\frac{IA}{TK} \rightarrow \max; \max$ $I_{RI} \rightarrow \max; \max$	Active innovator strategy $I_{LII} \rightarrow \max$ $I_{LSIP} \rightarrow \max$ $\frac{IA}{TK} \rightarrow \max$ $I_{RI} \rightarrow \max$	Active-passive innovator strategy $I_{LII} \rightarrow \min; \max$ $I_{LSIP} \rightarrow \max$ $\frac{IA}{TK} \rightarrow \max$ $I_{RI} \rightarrow \max$
Active simulator strategy $I_{LII} \rightarrow \min; \max$ $I_{LSIP} \rightarrow \max; \max$ $\frac{IA}{TK} \rightarrow \max; \min$ $I_{RI} \rightarrow \min; \max$	Active-passive simulator strategy $I_{LII} \rightarrow \min; \min$ $I_{LSIP} \rightarrow \min$ $\frac{IA}{TK} \rightarrow \min$ $I_{RI} \rightarrow \min$	Passive simulator strategy $I_{LII} \rightarrow \min$ $I_{LSIP} \rightarrow \min$ $\frac{IA}{TK} \rightarrow \min; \min$ $I_{RI} \rightarrow 0$
Active conservative strategy $I_{LII} \rightarrow 0$ $I_{LSIP} \rightarrow 0$ $\frac{IA}{TK} \rightarrow 0$ $I_{RI} \rightarrow 0$	Active-passive conservative strategy $I_{LII} \rightarrow 0$ $I_{LSIP} \rightarrow 0$ $\frac{IA}{TK} \rightarrow 0$ $I_{RI} \rightarrow 0$	Passive conservative strategy $I_{LII} \rightarrow 0$ $I_{LSIP} \rightarrow 0$ $\frac{IA}{TK} \rightarrow 0$ $I_{RI} \rightarrow 0$

Notes:  $I_{LII}$  – integral indicator of the level of innovation activity intensity, share;  $IA$  – value of intangible assets combined with management of research and development, technical preparation of production and products fabrication, monetary units;  $TK$  – technical (production) capital of business entities, monetary units;  $I_{LSIP}$  – integral indicator of the level of strategic innovation potential of business entities, share;  $I_{RI}$  – integral indicator of innovation risk assessment in the stages of innovation implementation by business entities, share.

Let's consider calculation of the three-component system of the integrated indicators of innovation activity of business entities by the formula 1:

$$\left\{ \begin{array}{l} I_{LII} = \sum_{l=1}^n \frac{\sum_{j=1}^m Z_{lj}}{m} \times \alpha_l; \\ I_{ISIP} = \sum_{l=1}^n \frac{\sum_{j=1}^m F_{lj}}{m} \times \vartheta_l; \\ I_{RI} = \sum_{l=1}^n \frac{\sum_{j=1}^m X_{lj}}{m} \times \beta_l. \end{array} \right. \quad (1)$$

where:  $Z_{lj}$  – value of the  $j$ -th indicator of the  $l$ -th group included in the calculation;  $\alpha_l$  – degree of influence of the  $l$ -th evaluation group on the overall level of innovation intensity;  $m$  – the number of evaluation indicators for each group;  $n$  – number of evaluation groups;  $F_{lj}$  – value of the  $j$ -th indicator of the  $l$ -th group included in the calculation;  $\vartheta_l$  – the degree of influence of the  $l$ -th evaluation group on the overall level of strategic innovation potential of business entities;  $X_{lj}$  – value of the  $j$ -th indicator of the  $l$ -th group included in the calculation;  $\beta_l$  – extent of the impact of the  $l$ -th assessment group on the overall level of risk from innovation on stages of innovation implementation.

The proposed indicators for selecting an innovative strategy for business entities demonstrate the level and quality of management of each component under consideration. In order to increase competitiveness of business entities, it is necessary to develop and implement measures, effective management methods, to organize management processes for risk, technical capital, innovation potential.

Human factors play a crucial role in enhancing innovation activity and managing innovation potential of business entities. Efficiency of its use requires continuous search of forms and methods of activation of creative, innovative activity of employees, their orientation on the accelerated development of innovations in production, making a creative climate, which requires open informal style of management, involvement of intelligent and talented personnel in the non-standard thinking, introduction of a new ideas search system, creation of innovative climate, culture.

Effectiveness of the process of innovation activity managing of business entities depends on development of innovative, in particular, scientific and technological potential.

Ways to increase intensity and effectiveness of innovation activity are: creation on a permanent or temporary basis of new innovative units of organizational structures, among which there are matrix structures, scientific and technical units,

scientific and technical organizations, internal ventures, development of business networks, network technologies, intercompany relations. The latter include the following basic forms of intercompany cooperation: agreements on cooperation on specific aspects of activity; agreements for small business acquisition by large companies to gain new technologies; contractual relations (on the basis of long-term contracts) between suppliers of materials and their consumers in the form of scientific and technical alliance, joint ventures, consortium, financial and industrial groups.

At the same time, in order to intensify innovation activities, it is necessary to optimize the costs of such activities, i.e. R&D, innovation, development of new products and technologies, promotion and sale, protection of intellectual property objects.

Minimization of innovation activity is due to shortening of R&D process, introduction and production of innovation, rollout, patent rights acquisition period.

The process of managing innovative potential of business entities is focused on enhancing existing competitive advantages or facilitating formation of new ones. This process should allow for:

diagnosing the process of managing innovation potential: an integrated preparatory generalized conclusion about the state of actual and hypothetical innovation potential of business entities (investigation of the results of management actions of formation and preparatory evaluation of innovation potential, conditions of internal and external environment) on the basis of appropriate assessment of relevant analytical information, reports. Based on quality diagnostics, managers are able to substantiate and make effective decisions about planning and managing innovation potential;

planning (strategic, tactical and operational planning) of the process of managing the innovative potential of business entities (setting guidelines, goals, growth rates), developing decisions on timing, executors and sequence of execution of the process in order to achieve the intended results;

a system of incentives for the personnel at the general and individual level, which is oriented on the initiative and support of honest fulfillment of duties by employees on the basis of moral (innovative culture) and material interest, self-motivation for creative development of employees, etc.;

organizing the process and ensuring management of the innovation potential of business entities, which involves solving issues of final optimal structure of the potential, regulating actions of executives, establishing support for the process of optimal development of innovative potential;

monitoring and controlling the process of managing innovation potential of business entities.

Therefore, increasing competitiveness of business entities requires a focus on improving the process of managing innovation potential, identifying deviations from the desired state of potential, formation of a system for managing innovation potential.

The search for new methods of management of business entities inevitably leads the business entities to update the material base, increase production efficiency,

increase business activity, innovate, produce such products that would be competitive on the world markets. Effective innovation depends first and foremost on a number of factors. Of utmost importance is the completeness of financial relationships formed in case of attracting different sources, effective use of funds, available resources, implementation of the operational strategy.

Managing production entities (business entities and their units) in today's changing market environment is a complex process that involves many risks and depends on many factors. In these circumstances, it is impossible to do without the use of modern mathematical tools, information technology and computers.

The developed model allows to determine in what percentage of the whole range of products each type of products is produced, taking into account the market environment and actions of competitors and the possibility of optimal adjustment of this ratio in order to maximize the income from sale of enhanced products.

If a business entity produces and markets products in accordance with the strategy outlined in the study, it will be able to maximize revenue from the sale of a unit of all types of enhanced products. Calculations made using the proposed model will allow us to formulate measures for making rational decisions that will allow the business entity to timely enter the market with innovative products, outstripping potential competitors and conquering the market segment.

Based on the research conducted to develop an innovative business entity strategy to enhance competitiveness, it is important to note the specific recommendations for strategy formulation:

in the current conditions of the world economy, a business entity should in the overall development strategy bring innovative features to the main, general line. A business entity innovation strategy should be the most important strategic driver, and innovative development is the most important strategic goal, not just functional areas or tasks;

functional strategies should be a platform for developing an innovative business development strategy for business entities;

strategic management of innovative development of business entities should be considered as a process of implementation of the system of management of the basic spheres of activity on innovative grounds in order to achieve the goals of strategic and innovative development, increase of competitiveness and competitive positions, financial success, building innovative strategy taking into account changes of environment;

choice of innovative strategy of business entities under certain internal and external conditions, scale of factors of influence on innovative development and activity of business entities should be based on analysis and evaluation of such components as innovative intensity of enterprise, strategic innovative potential, risks of innovative activity, technical capital. These elements cover all aspects of business entities, which are oriented on the innovative way of development, open up possible prospects for development;

decision-making process for formulation of an optimal strategy for fabrication of innovative products by business entities, sale of which on the market could provide



them with sufficient financial benefits, should be based on modern technologies, in particular application of economic and mathematical modeling in the conditions of market uncertainty;

applying a game-theoretic model to formulate an optimal strategy for manufacturing innovative products by business entities will solve the problem of optimizing production volumes of new products, taking into account additional costs incurred by business entities due to development, research and production of these products.

### **Conclusion**

Grounded on the basic methodological provisions of strategic and innovative management, the main principles and tasks of strategic management of innovative development of business entities were substantiated, the system of strategic factors that determine formation of an innovative strategy, a description of levels of strategic management with consideration of innovative component, directions for development of innovative activity and increasing competitiveness of business entities were presented. It was proved that the innovation strategy is the basis for conceptualizing economic development at all levels of national economy.

Strategic management of innovative development, first of all, involves definition of goals in the context of each management object with justification of the result of implementation. Thus, the object of management is the production, technical capital (a complex of objects that creates an active part of the main production assets, intangible assets related to management, organization of research and development, technical preparation of production and fabrication of goods), human, information and financial resources, investment capital.

In the current market-oriented conditions, successful corporate strategies should be combined with innovative strategies to achieve the stated goals of business entities. Based on these conditions, the necessity of distinguishing nine innovative strategies for the development of business entities was substantiated, classification by relevant features was refined, correlating them with the basic strategy, which allowed to define indicators and the process of selection of innovation strategy. Characteristics of the innovation strategy were presented taking into account types of implemented innovations and conditions of application.

Scientific and methodological approach to selection of innovative strategy for development of business entities has been improved, which, in contrast to the mentioned, proposes the process of formulating an innovative strategy under given internal and external conditions, the scale of factors influencing its innovation activity and development.

Tools for carrying out the study of external and internal environment on the basis of the formulated system of indicators (innovative intensity of the enterprise, strategic innovation potential, risks of innovative activity, technical capital of enterprises) have been clarified. This approach solves the practical problems of business entities in case of introduction of different types of innovations, enables them to become activators or fully functional participants in the innovation process.

The content of "the innovation intensity", "the strategic innovation potential", "the risks of innovation activity" concepts for business entities were clarified, scientific approaches to grouping, tools and methods of assessing the level of these indicators with their division into components were further developed.

It was substantiated that in the process of selecting an innovative strategy for economic entities it is important to estimate the value of the intangible component of the technical capital of business entities. The advanced growth of the intangible component value of technological capital is an indicator of quality of innovative development of business entities and achievement of strategic innovation goals.

A series of successive stages of the decision-making process for formulation of an optimal strategy for innovative products fabrication was proposed, which includes structuring of stages on the basis of ten interconnected blocks with justification of detailed interconnected measures and coherence between them, which makes it possible to adapt the decision-making process to innovation activity of business entities in uncertain market conditions, taking into account the market situation and actions of competitors, potential for optimal correction of actions with the purpose of maximizing revenue from selling products.

In the conditions of limited investment and budgetary resources, the process of formulating a national innovation strategy, adjusting functioning of national and regional innovation systems, enhancing competitiveness of the economy and creating conditions for implementation of innovation policy should proceed due to optimal selection and effective implementation of a set of economic steps for implementing the state innovative policy, selection criteria and application of the economy innovative development models, forms of their implementation, establishment of a state regulation system for innovation activity, considering actions at theoretical, methodological, instrumental and organizational levels, which causes identification of interconnection and interdependence of innovative strategies and formation models of the innovative economy.

It is advisable to provide additional support for development of innovative processes by optimizing the state regulatory functions, simplifying operations of administrative control and supervision, overcoming regulatory barriers for business entities. Therefore, it is important to review the public policy, develop preventive measures related to formulation of a national innovation strategy, switch the economy to a leadership type of development, taking into account objectives, status and conditions of innovative development.

## References

- Baumgartner, R. J., & Rauter, R. (2017). Strategic perspectives of corporate sustainability management to develop a sustainable organization. *Journal of Cleaner Production*, 140, 81-92. URL: <https://www.sciencedirect.com/science/article/pii/S0959652616304358>
- Bouncken, R. B., Fredrich, V., Ritala, P., & Kraus, S. (2018). Coopetition in new product development alliances: advantages and tensions for incremental and radical innovation. *British Journal of Management*, 29(3), 391-410. URL: <https://onlinelibrary.wiley.com/doi/full/10.1111/1467-8551.12213>

- Clauss, T. (2017). Measuring business model innovation: conceptualization, scale development, and proof of performance. *R&D Management*, 47(3), 385-403. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/radm.12186>
- Coccia, M. (2017). Sources of technological innovation: Radical and incremental innovation problem-driven to support competitive advantage of firms. *Technology Analysis & Strategic Management*, 29(9), 1048-1061. URL: <https://www.tandfonline.com/doi/abs/10.1080/09537325.2016.1268682>
- Dayan, R., Heisig, P., & Matos, F. (2017). Knowledge management as a factor for the formulation and implementation of organization strategy. *Journal of Knowledge Management*, 21(2), 308-329. URL: <https://www.emerald.com/insight/content/doi/10.1108/JKM-02-2016-0068/full/html>
- França, C. L., Broman, G., Robèrt, K. H., Basile, G., & Trygg, L. (2017). An approach to business model innovation and design for strategic sustainable development. *Journal of Cleaner Production*, 140, 155-166. URL: <https://www.sciencedirect.com/science/article/pii/S0959652616308010>
- Gutierrez-Gutierrez, L. J., Barrales-Molina, V., & Kaynak, H. (2018). The role of human resource-related quality management practices in new product development: A dynamic capability perspective. *International Journal of Operations & Production Management*, 38(1), 43-66. URL: <https://www.emerald.com/insight/content/doi/10.1108/IJOPM-07-2016-0387/full/html>
- Kasemsap, K. (2017). Strategic innovation management: An integrative framework and causal model of knowledge management, strategic orientation, organizational innovation, and organizational performance. In *Organizational Culture and Behavior: Concepts, Methodologies, Tools, and Applications* (pp. 86-101). IGI Global. URL: <https://www.igi-global.com/chapter/strategic-innovation-management/177568>
- Kianto, A., Sáenz, J., & Aramburu, N. (2017). Knowledge-based human resource management practices, intellectual capital and innovation. *Journal of Business Research*, 81, 11-20. URL: <https://www.sciencedirect.com/science/article/abs/pii/S0148296317302461>
- Lee, K., Woo, H. G., & Joshi, K. (2017). Pro-innovation culture, ambidexterity and new product development performance: Polynomial regression and response surface analysis. *European Management Journal*, 35(2), 249-260. URL: <https://www.sciencedirect.com/science/article/abs/pii/S0263237316300391>
- Santoro, G., Ferraris, A., Giacosa, E., & Giovando, G. (2018). How SMEs engage in open innovation: a survey. *Journal of the Knowledge Economy*, 9(2), 561-574. URL: <https://link.springer.com/article/10.1007/s13132-015-0350-8>
- Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018). The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. *Technological Forecasting and Social Change*, 136, 347-354. URL: <https://www.sciencedirect.com/science/article/pii/S0040162517302846>
- Voegtlin, C., & Scherer, A. G. (2017). Responsible innovation and the innovation of responsibility: Governing sustainable development in a globalized world. *Journal of Business Ethics*, 143(2), 227-243. URL: <https://link.springer.com/article/10.1007/s10551-015-2769-z>
- West, J., & Bogers, M. (2017). Open innovation: current status and research opportunities. *Innovation*, 19(1), 43-50. URL: <https://www.tandfonline.com/doi/full/10.1080/14479338.2016.1258995>