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Strategic Management of Innovative Development of the Region to Ensure its Sustainable Development

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ABSTRACT:
The study is devoted to determining the theoretical and methodological foundations of strategic management of innovative development of enterprises in the region in conditions of instability. It is substantiated that the permanence of innovations and continuous strategic management are key factors in the formation of stability and long-term competitive advantages of enterprises. The role of innovation strategy as a component of corporate, business and functional strategies is revealed, and its differences from R&D strategy are outlined. Modern models of the innovation process are systematised – from linear to network and knowledge-based models – and their evolution and influence on the choice of innovation strategies are shown. A map for choosing an innovation strategy depending on the state of the enterprise according to the criteria of economic added value and risk resistance is proposed. It is shown that investment strategy is a tool for the practical implementation of innovative solutions, and diversification strategies contribute to reducing the risks of innovative activity. The feasibility of creating an integrated innovation complex as a mechanism for managing the innovative transformation of the region, combining higher education institutions, technology parks, venture funds, enterprises and state institutions, is substantiated. Based on an analysis of the innovative potential of the Kyiv region, the existence of prerequisites for the transition to an innovative development model has been proven, provided that network approaches are implemented, institutional interaction is strengthened, and nonlinear models of the innovation process are used. The work uses elements of portfolio analysis, strategic and institutional approaches, which ensured a comprehensive assessment of the sustainability of enterprises and the regional innovation system and identified key constraints to its development. The results of the study can be used to develop regional innovation policy, improve the system of strategic enterprise management, form programmes for the innovative transformation of industrial regions, and modernise interaction between business, science, and government on the basis of sustainable and inclusive growth.

Keywords: strategic innovation management, innovative enterprise strategy, economic risk resistance of enterprises, network models of innovative development, integrated innovation complex

1. Introduction

One of the factors contributing to the increased efficiency of enterprises in the region in conditions of instability is strategic management, which is characterised by, firstly, scenario-based planning focused on achieving results in the external environment;

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secondly, the emergence of a set of adaptive decisions that complements the set of planned decisions; thirdly, the iterative and continuous nature of the management process; and fourthly, the complexity of management functions and results (Trott, P., 2017).

Successful innovative development of enterprises in the region in modern conditions can only be ensured through the use of continuous strategic management methods. As global experience shows, the condition for the success of innovations in an enterprise is their permanence, which consists in the implementation of innovations every 1-3 years. The most effective way to ensure the permanence of the innovation process in enterprises in conditions of instability is strategic innovation planning (Roterberg, Ch., 2020).

We also emphasise the importance of strategic management for ensuring the sustainability of an enterprise. The potential of an enterprise that guarantees effective activity in the future is one of the final results of strategic management based on an entrepreneurial style of behaviour, the goal of which is long-term competitive advantages, optimisation of potential profitability, flexibility of the organisational structure and balance of the economic portfolio (Marzi, G., 2022).

In the context of this study, strategic management of innovative development of enterprises in the region is understood as the process of developing an innovation strategy and its implementation, based on a comparison of the current level of economic stability, economic value added, and resource potential of the enterprise with the state and trends of change in the external environment, its opportunities and threats.

In the strategic management system, there are three main types of strategies — corporate (basic), business, and functional (Govindarajan, V., 2016), to which innovation belongs. An innovation strategy is a general line of behaviour (a set of behaviours) of an enterprise regarding the use of innovations in economic activity.

An innovation strategy is developed within the framework of the overall strategy of the city enterprise and is aimed at achieving the goals of innovative development.

It should be emphasised that domestic researchers (Eradatifam, M., 2020) often equate innovation strategy with R&D strategy, which corresponds to a broad interpretation of innovation as scientific and technological progress (STP) within enterprises, industries and regions. In this case, the following characteristic features of the R&D strategy can be mentioned.

The specificity of R&D as a business lies in the fact that a «two-business» situation often arises: obtaining and using the planned results of R&D for the benefit of the enterprise, as well as side results that are commercially significant. Thus, the R&D strategy also affects the effectiveness of other business strategies.

The R&D strategy is built taking into account the basic strategy of the enterprise. At the same time, it has its own field of application and specific features. Aligning the R&D strategy with the basic strategy of the enterprise leads to synergistic effects.

The most important element of an enterprise's R&D strategy is the selection and management of the R&D portfolio in conditions of limited resources. According to this criterion, the selection of an R&D strategy is based on efficiency and the rational use of resources in conditions of risk and uncertainty, which are inherent in innovation.

The choice of a specific R&D strategy (active – development of new products and technologies, defensive – improvement of products and technologies, mixed, and others)

depends on the market position, competitive status, stage of the industry life cycle, and the enterprise's business portfolio.

2. Methods

The study uses a comprehensive methodological approach that combines strategic, institutional and portfolio analysis tools to assess the innovative development of enterprises in the region. Structural-logical generalisation methods were used to systematise models of the innovation process and forms of innovation strategies, as well as economic and analytical methods to determine the level of economic added value and risk resistance of enterprises. The use of comparative analysis elements made it possible to assess the evolution of approaches to innovation management, while the expert assessment method was used to form a strategic choice map. To substantiate the mechanism of innovative transformation of the region, a systematic approach was applied, which ensured the study of the interaction of elements of an integrated innovation complex and revealed key institutional dependencies and limitations of the innovation environment.

3. Results of the study

For different divisions (strategic business units), it is possible to use several R&D strategies, taking into account the advantages and organisational requirements for implementing each strategy.

One of the tasks of developing an innovation strategy is to coordinate operating and development costs in such a way as to implement innovative projects without disrupting processes that are vital to the enterprise, i.e., ensuring its sustainability. In conditions of high environmental instability, the choice of an innovation strategy requires enterprises to continuously balance the expected economic value added with their level of risk resistance. The proposed strategy map reflects this dynamic trade-off, as shifts in market uncertainty, resource availability, or institutional conditions may cause enterprises to move between strategic positions. At the same time, regional characteristics - such as the maturity of innovation infrastructure, access to financial resources, and the intensity of cooperation between business, academia, and public institutions - shape strategic behaviour and influence firms' ability to absorb risk and generate value. Therefore, the strategy map should be interpreted not as a static classification tool, but as a flexible analytical framework that allows enterprises to adjust innovation paths in response to rapidly changing regional and economic conditions.

There are two basic strategies for an enterprise to operate in a highly uncertain environment: adapting the enterprise to changes and influencing the environment to make it more conducive to its development.

In any case, the initial condition for ensuring sustainability in the implementation of innovations is strategic planning of a scenario-based nature, on the basis of which strategic choices are made, taking into account the results of the analysis of the external and internal environment of the enterprise.

In a broad sense, strategic innovation planning is a set of measures for adapting to and forecasting (creating) changes in the external environment through the implementation of innovative projects by the enterprise. In terms of higher education institutions, strategic planning of innovations is the choice of an enterprise's innovation strategy in accordance with existing goals, problems and opportunities determined by the characteristics of the external and internal environment, potential, sustainability and efficiency. Strategic planning is a prerequisite for ensuring the sustainable development of enterprises in the region. In many large firms, even in Germany, special commissions are created for these purposes, consisting of representatives of the enterprise's functional services (manufacturers, technologists, designers, marketers) (Carvache-Franco, O., 2022). It should be noted that one of the most significant stages of analysis is the assessment of the meso-environment and the immediate environment of the enterprise. Until relatively recently, the industry environment included suppliers of raw materials, buyers of products, competitors and trade intermediaries. However, with the development of strategic innovation marketing, the composition of the environment has expanded significantly and now includes shareholders, local organisations, creditors, trade unions, universities, scientific laboratories and other scientific organisations. In other words, all interested groups that directly influence or are directly influenced by the company's activities are sources of innovative ideas and determine its innovative capabilities. Innovation strategies can be grouped according to various criteria: by the way they respond to changes that are occurring and possible in the external environment, and by the degree of participation in the innovation process (Fig. 1).

The most popular today are matrix methods of economic portfolio analysis and selection of an enterprise development strategy, in which the choice of a development strategy is a function of two variables that can be aggregated and take into account several factors weighted by significance. Firstly, this is a characteristic of the environment (primarily its attractiveness and level of uncertainty); secondly, it is a characteristic of the internal environment (resource potential and competitive status of the enterprise). One of the methods for increasing innovation opportunities and reducing the risks of innovation is diversification strategies. The choice of an innovative diversification strategy that allows for synergistic effects is influenced by the degree of the enterprise's knowledge of target markets and planned technologies. The most popular portfolio analysis matrices are those of the Boston Consulting Group, Ansoff, Arthur D. Little–Shell, and General Electric–McKinsey (Dwivedi, R., 2021). When applying portfolio matrices under conditions of severe resource constraints, enterprises often face practical limitations that affect the quality of strategic decisions. In such situations, the use of portfolio tools may become overly simplified, focusing on short-term financial indicators while underestimating innovation risks, time lags, or organisational capabilities. Misapplications typically arise when enterprises lack reliable data, strategic flexibility, or managerial competencies required to interpret portfolio positions dynamically rather than mechanically. As a result, potentially promising innovation projects may be rejected, while low-risk but low-value initiatives are prioritised.

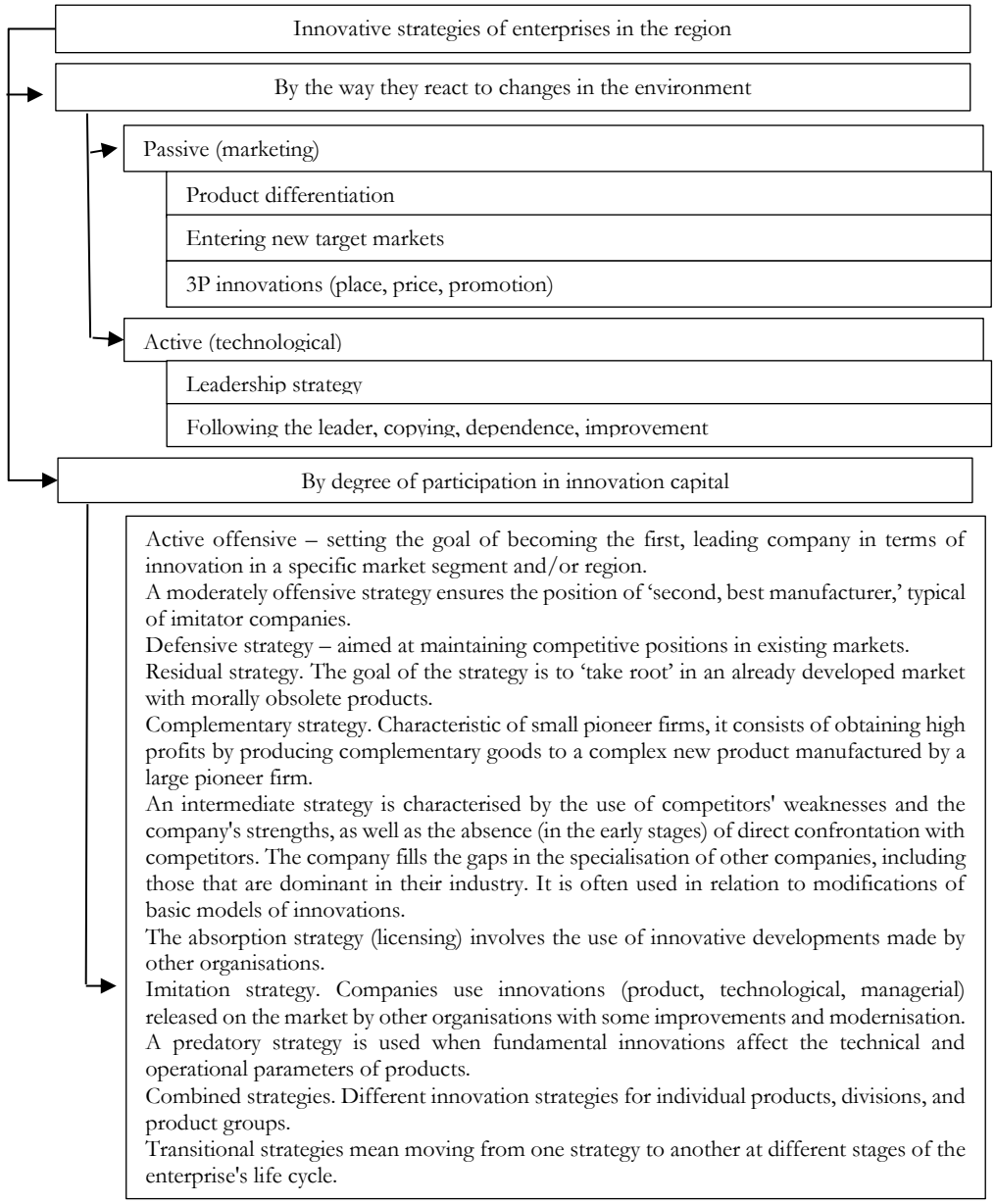

Fig. 1. Grouping of strategies for innovative development of an enterprise [developed by the author]

These constraints highlight that portfolio matrices should be used as supportive analytical instruments, not as deterministic decision-making tools, and their effectiveness largely depends on managerial experience, institutional context, and the availability of strategic resources. This limitation reflects the scope of the present study, which focuses

on strategic frameworks rather than on detailed empirical analysis of failed innovation portfolios.

The use of the latter to select an R&D strategy in a diversified enterprise is shown in Fig. 2.

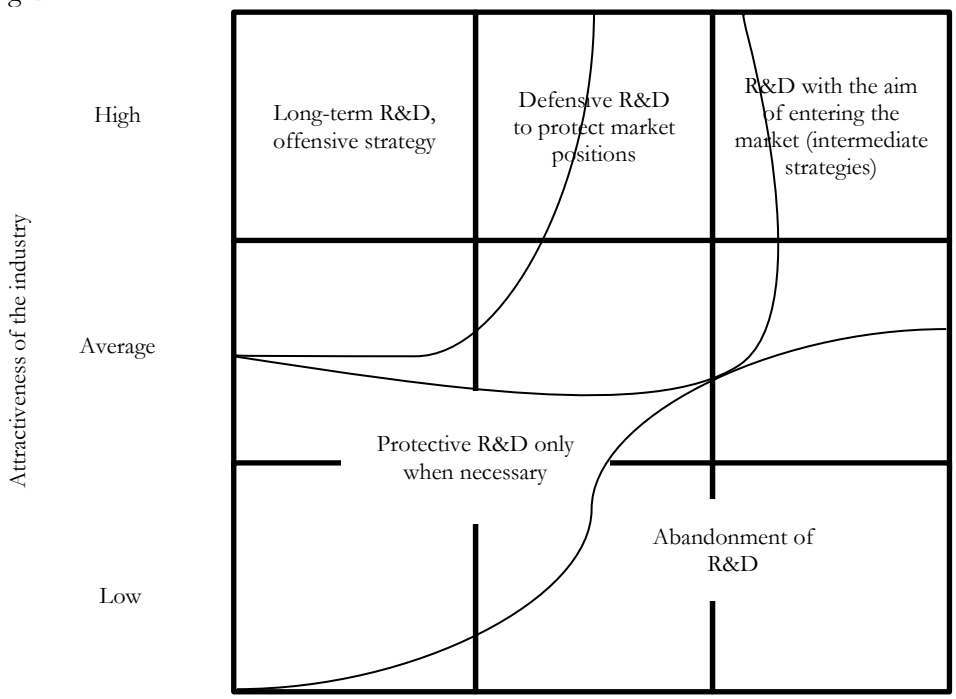

Fig. 2. Recommended R&D strategies for enterprises in the region [systematised by the author]

The sustainability of an enterprise in implementing innovative strategies is determined by a well-founded choice of the latter. The essence of risk resistance as a systemic characteristic of an enterprise, the developed methods for diagnosing and forecasting its level, based on the comprehensive use of financial, managerial and strategic analysis indicators, allow it to be used as a criterion for choosing an innovative strategy in an unstable environment.

The tool for portfolio analysis and selection of an innovation strategy is a map of the economic conditions of the enterprise, determined by the values of economic added value and risk resistance, for each of which a specific strategic set is recommended (Table 1).

Table 1. Map for selecting a strategy for the innovative development of enterprises in the region

Current status of the enterprise	State characteristics	Strategic set

A	Non-critical risk stability values with a positive change in economic added value	Active, moderately offensive, defensive, residual, intermediate, absorbing, imitative, predatory strategies
B	Non-critical risk stability values with a negative change in economic added value	Moderately offensive, defensive, residual, intermediate, absorbing, imitative, predatory strategies
C	Risk stability values not higher than average with a negative change in economic added value	Defensive, residual, intermediate, absorbing, inimitative, predatory strategies
D	Low risk stability values with a negative change in economic added value	Residual, intermediate, absorbing, imitative, predatory strategies

The economic value added indicator serves as an indicator of the success of the previously chosen strategy, since the concept of value is now accepted by the economic community as a paradigm for assessing business development. Thus, the choice of a strategy for the innovative development of a region that ensures the stability of an enterprise in a specific economic situation is determined by its position in the field of indicators «economic risk resistance – economic value added».

Regardless of the type of innovation strategy, they are implemented through the development and implementation of investment projects. Therefore, the investment potential, investment attractiveness and investment strategy of the enterprise are of great importance. The latter is a tool for managing investment activities and is a system of long-term goals, determined by the basic development strategy and its objectives, the fulfilment of which can lead to the achievement of the set goals and the expected effects. Investment activity management is aimed at forming and effectively using the enterprise's investment resources, taking into account factors of uncertainty and possible risk. By identifying the elements of the enterprise's microenvironment and using a process-functional approach to the organisation of material flow, the following areas of investment activity can be identified: material and technical supply, production, distribution system, management (as a means of coordinating the entire production process), which in turn may become objects of change. The peculiarities of the innovative potential and infrastructure of the state dictate the requirements for improving the effectiveness of the implementation of innovative strategies by the enterprise, one of which is the use of network innovation models and integration development strategies.

In global practice, six models of the innovation process are distinguished, the emergence of which is associated with changes in the economic situation (Kahn, K., 2018).

1. «Technology-driven» (technology push) or "linear", «non-classical» models, which prevailed from the mid-1950s to the late 1960s. In these models, the innovation process was seen as the transformation of knowledge into new products in the form of specific stages. The transition from linear to network-based innovation models is not instantaneous and occurs unevenly across enterprises. The speed of this shift depends on internal factors such as organisational learning capacity, managerial readiness, and resource flexibility, as well as on external conditions. Sudden external shocks—economic crises, technological disruptions, or institutional changes—may accelerate adoption by forcing enterprises to intensify cooperation and knowledge sharing, while prolonged uncertainty or weak institutional support may delay this transition. Therefore, enterprises often operate in hybrid configurations, combining elements of linear and network models during

adjustment periods. This perspective avoids treating innovation model evolution as a uniform or automatic process and highlights the strategic adaptability of firms in response to changing environmental pressures. These models were «proactive» in the market. To achieve results, it was necessary to concentrate efforts on the first stages of the innovation process – on R&D. The process of transforming R&D results into new products, processes and services was considered automatic (Fig. 3).

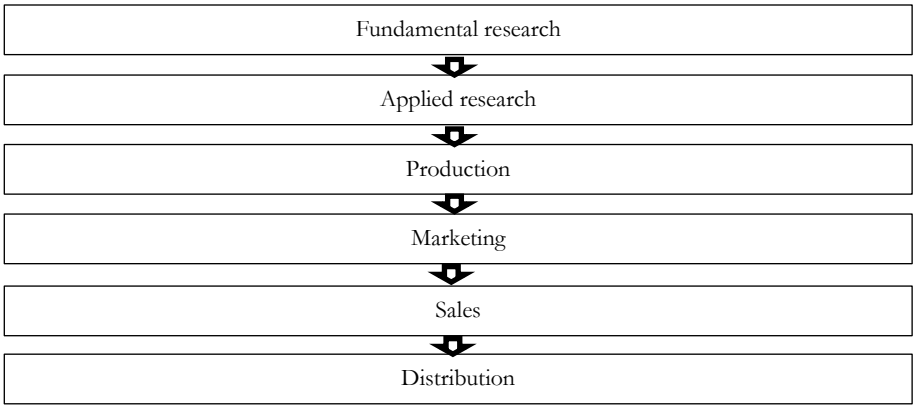

Fig. 3. Linear models of the innovation process technology push [systematised by the author]

2. Demand-pull models. Innovations were the result of signals coming from the market, changes in demand, rather than the result of R&D. These models were reactive to the market (Fig. 4).

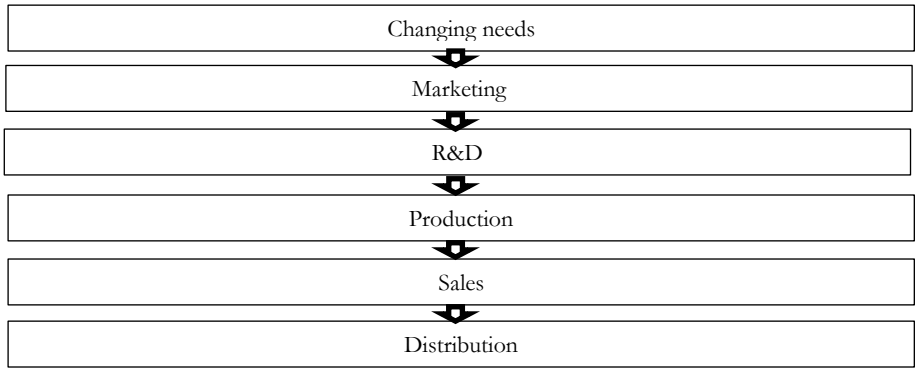

Fig. 4. Linear models of the innovation process thedemandpull [systematised by the author]

3. «Interactive models». The innovation process was viewed as a combination of the two previous models, in which new knowledge was combined with old knowledge. The model consisted of external and internal interactions. The innovation process began with the recognition of a new market opportunity and the creation of an innovation, or with an invention and the subsequent creation of an innovation, followed by the creation of a product and its production. The interactive model remained linear (Fig. 5).

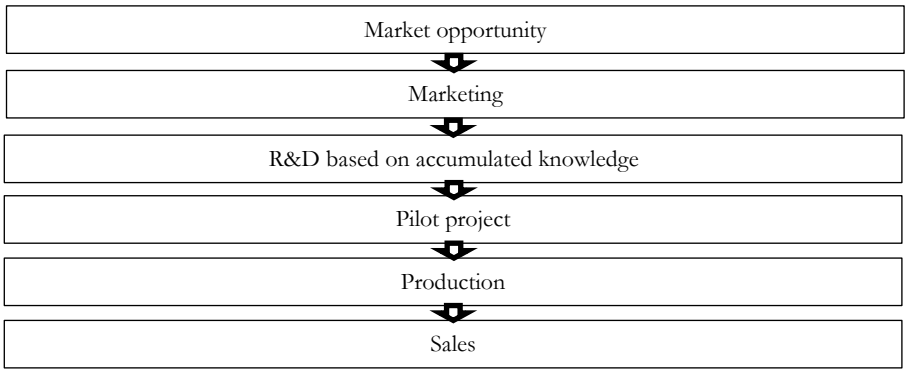

Fig. 5. Linear interactive models of the innovation process [systematised by the author]

4. «Integrated models». The emphasis was placed on combining research and development with production and on closer cooperation with suppliers and buyers. The implementation of horizontal and vertical integration strategies, as well as internal integration between departments to create a new product based on a project approach, made it possible to reduce development time and costs for creating innovative products and technologies. The models were supplemented by interactive ones (Fig. 6).

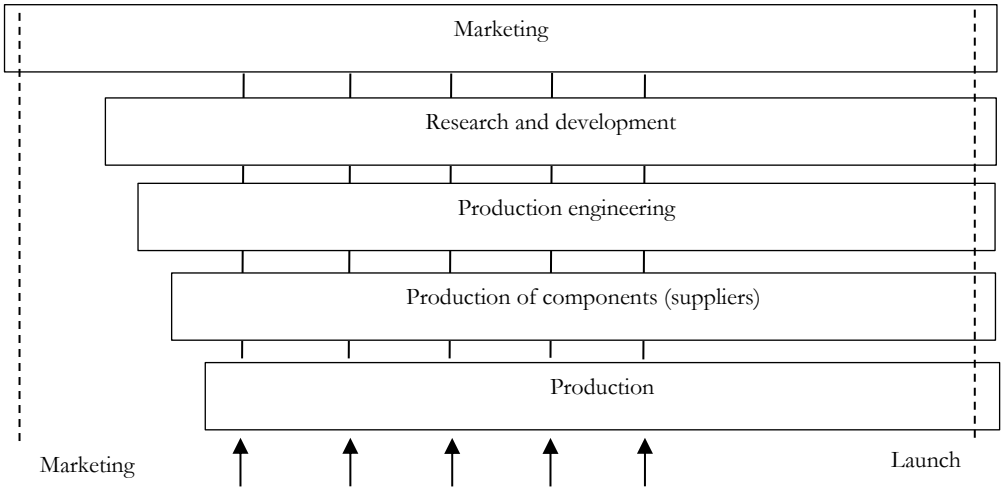

Fig. 6. Model of a non-linear integrated innovation process [clarified by the author]

5. «Network models or innovation systems». To create an innovative product, it is necessary not only to unite departments around the innovation process, but also to create and strengthen interactions with the microenvironment, which acts as a «source of knowledge». The basis of the model is the creation and development of an innovative infrastructure or innovative networks. The model provided for organisational flexibility, vertical integration with suppliers, horizontal technological cooperation, and an emphasis on non-price factors. The models paid great attention to the use of information and communication technologies to strengthen inter-company interactions.

6. Primary enabling features models based on knowledge and learning (emerged in the late 1990s). Their emergence is linked to the growing interest in learning as the main source of knowledge and the main source of competitive advantage for a company, whose innovativeness is determined by its ability to learn, and whose main resource is intangible assets. A distinctive feature of the model is integration with competitors for the exchange of knowledge. The innovation process is integrated and networked, based on the creation, dissemination and use of all types of knowledge.

The evolution of innovative models for implementing innovation strategies in the context of environmental change can be illustrated as follows in Fig. 7.

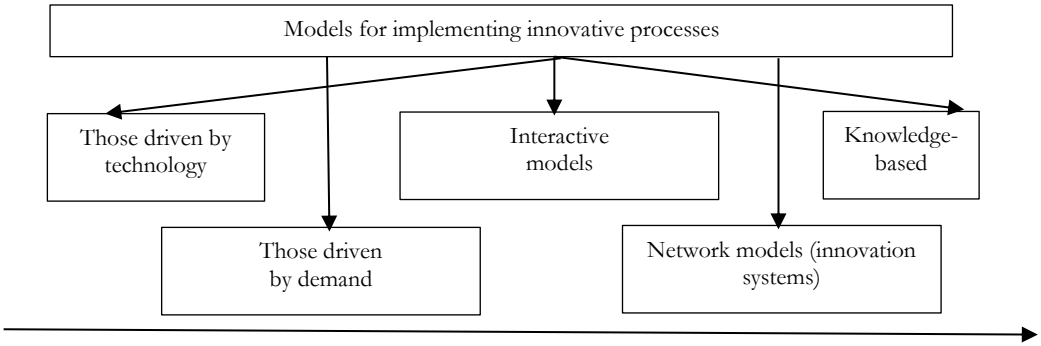

Fig. 7. Evolution of models for implementing innovation strategies [systematised by the author]

The choice of a strategy for the innovative development of enterprises in the region depends on the structural characteristics of the enterprise. In response to unforeseen actions of the system, with different ratios between diversity and uniformity of structure, which form the level of adaptive stability, they respond differently (Küfeoğlu, S., 2022).

A conservative system is not very diverse, but it is energetically powerful, which leads to low self-regulation capacity and the need for serious management efforts, the main goal of which is to stabilise the range of resources and conditions of the higher education institution. Such systems have less adaptive stability to the disappearance of elements. The disappearance of diversity leads to degradation processes. The emergence of new elements is accompanied by an increase in adaptive stability.

A crisis system is overly diverse, with low-energy elements, which leads to low production efficiency. Increasing efficiency only in one area leads to a progressive increase in overall stability. A disharmonious structure leads to susceptibility to controlling influences. In these systems, there is an increase in adaptive stability when elements disappear. The emergence of new elements leads to a decrease in adaptive stability.

Nuclear systems are characterised by average diversity and average power. These are the most inertial and predictable systems. Without exhibiting extreme properties, they slightly reduce adaptive stability with a decrease in diversity and slightly increase adaptive stability with an increase in diversity. Systems do not undergo artificial development of individual elements; effectiveness is achieved through the complexity of influences.

Each model of innovation process implementation is characterised by the specificity of the resource structure, the type of stability and entropy balances. To implement innovation strategies, the system must have sufficient actual entropy. The proposed entropy balances provide a conceptual framework for understanding the sustainability of innovation processes; however, their practical interpretation may vary across industries due to differences in technological intensity, organisational structure, and resource dynamics. Comparative analysis of entropy balances across sectors could reveal how structural diversity and stability interact within dynamic regional innovation systems. This perspective opens avenues for future research focused on modelling the adaptive capacity of enterprises and regions. Further development of operational indicators - such as proxies for structural diversity, knowledge intensity, and resource flexibility - would allow the transformation of abstract entropy concepts into measurable metrics for assessing regional innovation sustainability. The model for implementing an innovation strategy that affects the characteristics of uniformity and diversity of an enterprise and the management of sustainability depends on the ratio between the introduced negentropy (Gin) and the actual entropy (Sf) (in (Table 2)).

Table 2. Entropy balances for different innovation models

Innovation process model	Characteristics of the resource structure	$S_{нач}$	$G_{нач}$	ΔG_{in} / ΔS_f
«Technology-driven» «Demand-driven»	Conservative system (extremely uniform)	min	max	<1
«Interactive models»	Crisis system (extremely diverse)	max	min	=1
Knowledge-based models;	Nuclear system (harmonious)	eqy	eqy	>1

In the context of globalisation, the success of innovative strategies is linked to the use of various forms of integration and inter-company cooperation, with scientific and technical (ST) cooperation playing a particularly important role, as it allows companies to access fundamental and applied knowledge, pool financial resources and limit competition at the commercialisation stage. A large share of ST work and commercialised innovation projects falls on venture associations in the form of technoparks, which allow for the diversification of financing and risk and the maximum use of synergy.

As global experience shows, the most effective way to transfer technology is through joint industry-university research centres, which lead in terms of capital-intensive research, number of projects implemented, project output, etc. Other forms of scientific and technical cooperation include cross-licensing, engineering and research centres, joint research enterprises, technology exchange and partnership agreements. The search for new organisational forms that ensure the rational use of limited resources and the effective commercialisation of scientific and technological achievements is becoming particularly important in the context of growing instability and economic crisis. At the level of individual enterprises, this often takes the form of merging R&D and marketing departments, abandoning sequential and parallel forms of implementing innovative projects and using participatory management methods, and transitioning to pluralistic organisational structures, where temporary secondary structures and separate coordinating units are created alongside the main structure. In addition, only applied research is developing within corporations, scientific and technical integration is growing, and inter-

company ties and joint actions in various fields are expanding. The Arrow effect (radical innovation is characteristic of small firms, while large corporations are characterised by innovative inertia) is the reason for the creation of internal venture divisions engaged in high-risk projects, which are autonomously managed and financed from special funds (Lewrick, M., 2023).

Summarising the above, we conclude that modern innovation processes unfold in a non-linear manner and are organised on the principles of outsourcing, the contract economy and the division of property rights. The introduction of self-organisation principles into the management of innovation processes means a transition from supporting individual enterprises to supporting the development of clusters of enterprises and organisations that conduct research and development. The expediency of using network forms of organisation of the innovation process is related to the fact that any innovative economic system of a region can be viewed as a non-linear dissipative structure. An innovative solution acts as a market attractor or set in the economic space, dramatically changing the market situation and creating an influx of raw materials, labour and financial resources for the implementation of venture investments (Marzi, G., 2022).

A study of the regional innovation system of the Kyiv region revealed that the elements and connections that form it, determined by the system of relations between participants and the state of infrastructure, cannot ensure its stability.

The absolute and impulse stability of the region's innovation system increases with the introduction of a new element – a mechanism for managing the region's innovation transformation, which allows for the redistribution of links leading to the formation of positive feedback loops. At the institutional level, this element can be represented by a new institutional entity – an integrated innovation complex, which:

performs the functions of generating and commercialising innovations, transferring innovation infrastructure to enterprises in the region;

is based on the principles of public-private partnership, integration of science, business, education and manufacturing enterprises.

Despite their integrative potential, the implementation of integrated innovation complexes is often constrained by coordination problems, governance gaps, and institutional barriers. These challenges include misalignment of incentives between science, business, and public authorities, fragmented decision-making, and unclear accountability structures. Under conditions of uncertainty, such weaknesses may reduce the effectiveness of collaboration and slow down innovation diffusion. Therefore, the reliability of regional innovation ecosystems depends not only on the formal inclusion of key actors, but also on the establishment of transparent coordination mechanisms, clearly defined roles, and shared responsibility for outcomes. Addressing these issues is essential for transforming integrated innovation complexes into stable platforms for sustainable regional development.

Let us consider the proposed composition and functions of the participants in the integrated innovation complex with the participation of HEIs as an active element of the mechanism for managing the innovative transformation of the region (Table 3).

Table 3. Integrated innovation complex: composition and functions of participants

Components of the complex	Functions and tasks performed in the context of innovative development of enterprises in the region

Higher education institution	Creation of innovative potential and innovative infrastructure (training personnel for innovative activities, generating product and process innovations, creating small innovative enterprises). Information support for innovative processes
Technology park	Formation of an innovative environment for the development of small and medium-sized innovative enterprises at various stages of commercial development of scientific knowledge, know-how and science-intensive technologies
Innovation incubator	Creation of innovations and favourable conditions for small enterprises (newly created and/or those in the early stages of development) with the aim of introducing innovative technologies and generating their own innovations
Venture innovation fund	Financial support for innovative activities and the creation of innovative infrastructure, methodological support for implemented investment innovation projects
Manufacturing enterprises	Commercialisation and diffusion of innovations: introduction of product and process innovations, release of innovative products
Ministry of Economic Development and Transformation	Activation and stimulation of innovation processes, implementation of state scientific, technical and innovation policy, development of venture capital investment and promotion of the creation of a regional innovation system
Innovation funds	Financial support for innovation processes. Financing of risky innovation projects through venture capital on a competitive basis
Commercial banks	Project financing of manufacturing enterprises implementing innovative investment projects

It should be emphasised that the integration of science and education is one of the most important issues in connection with the reform of the higher education system in Ukraine under the Bologna Process. The structural units of higher education institutions, which form the innovative infrastructure of higher education institutions, organise scientific, innovative, educational and methodological activities and additional education. Feedback from enterprises is a prerequisite. In this regard, the integration of educational and scientific centres and the innovative infrastructure of higher education institutions into a system should be based on a set of requirements for adaptation to the needs of customers – industrial enterprises in the region – through the implementation of research and development work.

Naturally, appropriate organisational and methodological support is necessary to organise the interaction of participants in an integrated innovation complex. The innovative development of an enterprise must be designed like any other system. To do this, it is necessary not only to define the tasks facing the entities, but also to create a system that would ensure the transition of the enterprise to a new innovation-oriented state. At the enterprise level, the practical implementation of the mechanism for managing the innovative transformation of the region through participation in an integrated innovation complex is reflected in the procedure of innovative economic and technological design (Fig. 8), which has been brought to the stage of practical use and tested at a number of industrial enterprises in the Kyiv region.

The integration into a single mechanism of a system of adaptive educational and scientific centres, higher education institutions, industry technology parks, venture innovation funds and manufacturing enterprises for the creation of innovative products and technologies allows the distribution of functions, responsibilities and risks among participants in innovation activities.

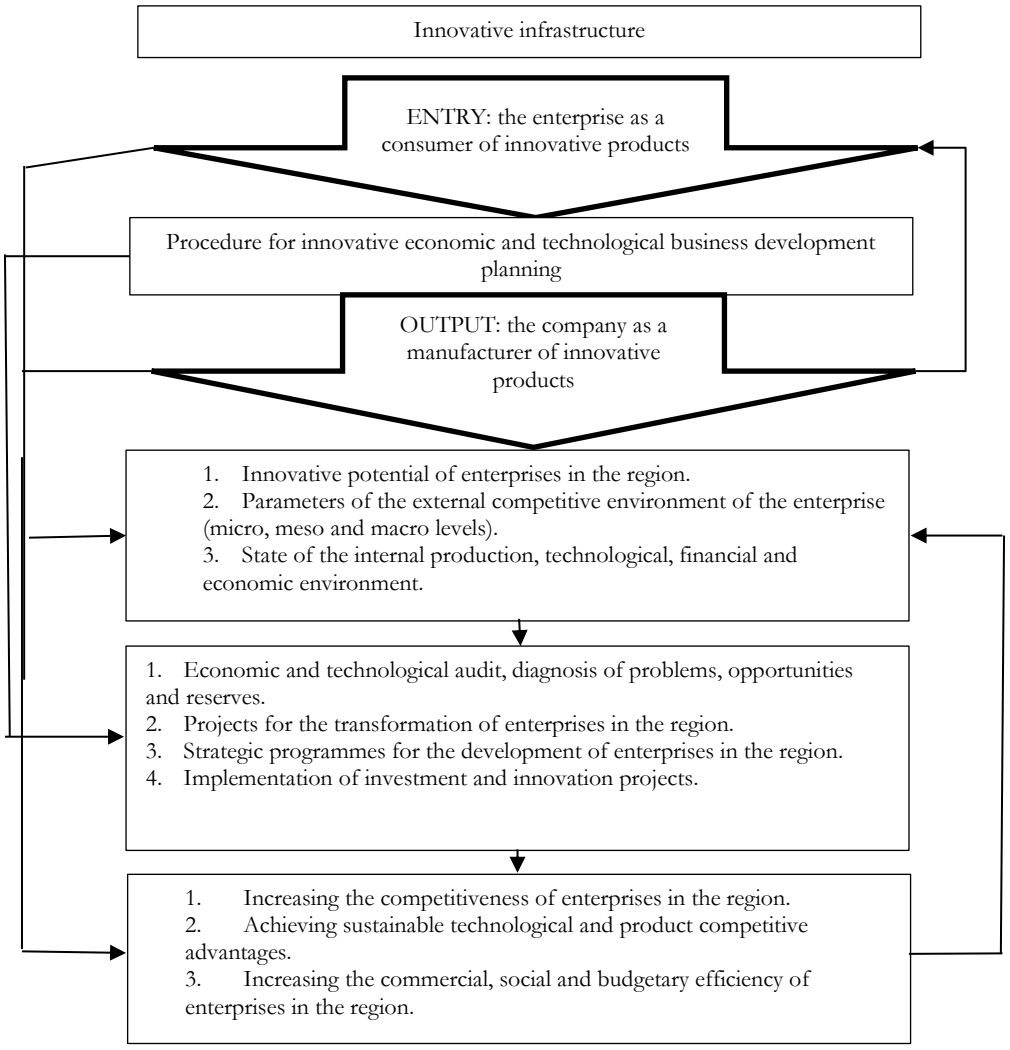

Fig. 8. Mechanism of innovative development of enterprises in the region through innovative economic and technological design [developed by the author]

Based on the results of diagnosing the innovative potential and sustainability of investment and innovation processes in the Kyiv region, it has been established that all conditions are in place to transform the region's potential into the main factor ensuring the transition of the industrial complex to an innovative path of development. This requires the organisation of interaction between scientific, human resources, production and technological, and financial components. In the practice of managing innovative development, this means a transition to non-linear network models and integration development strategies that allow the distribution of functions, responsibilities and risks among participants in innovative activities.

Conclusions

The study allowed us to comprehensively reveal the theoretical and methodological foundations of strategic management of innovative development of enterprises in the region in conditions of instability and high uncertainty of the external environment. A summary of modern concepts of strategic management confirmed that strategic management based on the principles of scenario planning, continuity, adaptability, and entrepreneurial orientation is a key factor in forming long-term competitive advantages and ensuring the sustainability of enterprises. It is important that strategic planning of innovations in modern conditions is becoming not a periodic but a permanent management function that determines the dynamics of innovative development.

It has been proven that one of the main mechanisms for supporting the sustainability of an enterprise in conditions of instability is rational strategic management of the innovation process. The central place in it is occupied by the development and implementation of an innovation strategy, which must be consistent with the overall strategy of the enterprise, its resource potential, level of risk resistance and characteristics of the external environment. It has been scientifically proven that the R&D strategy, as a component of the innovation strategy, forms the basis for creating an innovation portfolio, determining investment priorities and ensuring synergistic effects within a diversified business.

The paper systematises and analyses modern models of the innovation process – from classical linear to nonlinear network and knowledge-based models. Their evolution indicates the growing role of integration, inter-company cooperation and the creation of innovation networks, which allow enterprises not only to adapt to change, but also to shape their own influence on the market environment. It is shown that the effectiveness of implementing innovation strategies is largely determined by the entropy balance of the system and its ability to ensure an appropriate balance between structural diversity and the energy capacity of its elements.

A key result of the study is the development of a map for selecting innovation strategies according to the type of economic condition of the enterprise (based on EVA and risk resistance indicators). This makes it possible to make scientifically sound strategic choices, reduce the risks of innovation and ensure the sustainability of enterprises under various economic conditions.

The obtained results are consistent with recent studies on uncertainty-driven innovation, which emphasise the role of strategic flexibility, risk management, and value creation under volatile conditions. In line with this literature, the present study confirms that innovation strategies cannot be selected independently of uncertainty and resource constraints. At the same time, this research contributes to the existing debate by integrating economic value added and risk resistance into a unified strategic selection framework at the regional level. Unlike many prior studies that focus primarily on firm-level innovation outcomes, the proposed approach highlights the interaction between enterprise strategies and regional innovation systems, thereby extending the understanding of how uncertainty-driven innovation can be managed within complex regional environments.

Particular attention is paid to the role of investment strategy as a tool for implementing innovation. It is shown that the formation of investment potential and effective management of investment resources are necessary conditions for launching innovative projects and supporting their effectiveness, especially in conditions of high uncertainty.

A significant scientific and practical result of the work is the justification of the feasibility of creating an integrated innovation complex as an institutional mechanism for managing the innovative transformation of the region. It has been established that the inclusion of higher education institutions, technology parks, incubators, venture funds, manufacturing enterprises and state bodies in its structure makes it possible to ensure a complete innovation cycle – from the generation of knowledge to its commercialisation. The proposed model of interaction between participants in the innovation complex demonstrates the potential to ensure the absolute and impulse stability of the regional innovation system.

An analysis of the innovation potential of the Kyiv region has shown that there are real prerequisites for the transition to an innovation-driven type of development. At the same time, the system of interaction between its elements needs to be transformed in the direction of networking, integration and improving the quality of institutional support. The proposed mechanism of innovative economic and technological design at the enterprise level allows for the practical implementation of innovation strategies, improves the manageability of innovation processes and forms an adaptive architecture for innovation activities.

Thus, the study confirmed that ensuring the innovative development of enterprises in the region is possible only through a combination of strategic management, network models of organisation of innovation processes, integration strategies and institutional support. This approach creates the basis for the formation of a sustainable, adaptive, self-developing innovation ecosystem in the region that meets the requirements of the global knowledge economy.

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