Development of methods for managing innovation activities of economic systems

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Abstract. The purpose of this study is to develop methods for managing innovation activities of enterprises based on the formation of an innovative growth strategy. In article substantiates and summarizes the theoretical aspects of the management of innovative activities of enterprises, systematizes the principles for the development of an effective strategy for innovative growth, explores the types of innovation strategies depending on the enterprise's objectives, industry, competitive position, and suggests methods for managing innovation. Based on the analysis of the impact of production, financial and innovation and personnel factors, an integrated indicator was developed to assess the level of innovative growth of an enterprise and an algorithm for selecting and implementing an innovation growth strategy was developed.

1 Introduction

The fundamental factors in the growth of any economic system are innovative, including new technology, new type of system technologies, a new organization of labor and production, and a new motivational system. As a characteristic reflecting the growth of the enterprise in the aspect of development of its innovative activity, the content of the definition of innovative growth of the enterprise is substantiated and disclosed in the work. Innovative growth of an enterprise is a long-term increase in the value of an enterprise on the basis of the sale of products and services produced using new technologies, as well as the application of new organizational, technical and socio-economic decisions of an industrial, financial, commercial or administrative nature [1].

The innovative growth leads to the creation and marketing of competitive products and the improvement of the economic state of production. Successful achievement of the set innovative goals requires a way of managing changes of an innovative character, that is, an innovation growth strategy.

2 Materials and methods

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The following indicators of the effectiveness of strategic innovation management are highlighted in the work: the change of innovative potential that ensures the achievement of future goals and innovative activity that ensures the sensitivity of economic entities to innovations. In the long run, the most important characteristics are the magnitude of the company's value growth. The main provisions for the development and implementation of the strategy of innovative growth in the enterprise include the following. The main provisions for the development and implementation of the strategy of innovative growth in the enterprise can be attributed:

The activity of choosing an innovation growth strategy should be aimed at forming such a strategic position that will ensure the long-term viability of the enterprise in a changing environment based on the growth of innovative potential and innovative activity [2].

The right choice of the strategy will allow using the internal opportunities of innovation activity, discover hidden reserves of the enterprise development in order to increase the efficiency of its commercial activity.

In the process of strategy development, the general directions of development are substantiated, the advancement of which will ensure innovative growth and strengthening of the enterprise's positions [3, 4].

It is impossible to foresee all possibilities during the formation of a strategy. Only in the process of innovative growth are opened specific alternatives, there is also more accurate information. Therefore, the successful use of the strategy is impossible without constant monitoring and control of innovative growth (Table 1).

**Table 1. Principles for the development of an effective strategy for innovative growth.**

<table>
<thead>
<tr>
<th>Name of the principle</th>
<th>Essence of the principle</th>
</tr>
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<tbody>
<tr>
<td>Principle of systemic</td>
<td>The strategy of innovation growth is a single process, consisting of stages of development, implementation and implementation of innovations. The consistency of these stages among themselves has a significant impact on the final results of innovation. Innovative growth occurs both in the implementation and in the development of innovation.</td>
</tr>
<tr>
<td>Principle of prospects</td>
<td>Innovative activity should correspond to the strategic objectives of the enterprise</td>
</tr>
<tr>
<td>The principle of measurability</td>
<td>There must be a system for evaluating the effectiveness of an innovation growth strategy, including quantitative and qualitative indicators</td>
</tr>
<tr>
<td>Principle of resource security</td>
<td>It is necessary to have financial, technical and human resources of the enterprise to implement the strategy of innovative growth</td>
</tr>
<tr>
<td>Principle of uncertainty</td>
<td>It is expressed in the high risk of innovative measures, the protection of which must be manifested in careful forecasting and planning of the innovation growth strategy, as well as the creation of financial reserves to eliminate (or reduce) the possible negative consequences of risk or the timing of the implementation of certain innovative works (stages, stages) their planning.</td>
</tr>
<tr>
<td>Principle of effectiveness</td>
<td>Effective implementation of the strategy of innovation growth is determined by the growth of profits, expansion of the scale of business and accumulation opportunities for the subsequent reinvestment of capital, increased competitiveness of the enterprise</td>
</tr>
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</table>

The proposed model of research of the process of development and implementation of the strategy of innovative growth of enterprises (Figure 1) assumes the formation of a process of effective adaptation of the enterprise to the external environment by ensuring its innovative growth [5].
The growth of effective adaptation of the enterprise to the external environment by ensuring its innovative activity, therefore, the successful use of the strategy is impossible without constant process of innovative growth are opened specific alternatives, there is also more accurate the enterprise’s positions substantiated, the advancement of which will ensure innovative growth and strengthening of efficiency of its commercial activity, discover hidden reserves of the enterprise development in order to increase the company’s value growth. The main provisions for the development and implementation of the strategy of innovative growth in the enterprise include the following.

**Table 1.** Principles for the development of an effective strategy for innovative growth.

<table>
<thead>
<tr>
<th>Principle of...</th>
<th>Effectiveness indicators of strategic innovation management</th>
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<tr>
<td><strong>Principle of...</strong></td>
<td><strong>Prospects</strong></td>
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<tr>
<td>1. Analysis of innovation management process</td>
<td>1.2 Analysis of the dynamics of innovation activity</td>
</tr>
<tr>
<td>Block 2. Planning balanced innovation growth</td>
<td>2.1 Increasing promising innovations</td>
</tr>
<tr>
<td>Formation of innovative potential</td>
<td>Formation of a set and calculation of indicators</td>
</tr>
<tr>
<td>Development of a plan for the implementation of innovative projects</td>
<td>Evaluation and resource planning</td>
</tr>
<tr>
<td>Block 3. Development of recommendations for changing innovation activity and enterprise potential</td>
<td></td>
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<tr>
<td>Block 4. Formation of the strategy of innovative growth</td>
<td></td>
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<tr>
<td>Block 5. Monitoring (monitoring) indicators of innovation growth</td>
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</table>

**Fig. 1.** Model of research of process of development and realization of strategy of innovatively growth of the enterprises.

The success of the activities of the enterprise on the market depends largely on its strategy. In Figure 2, the model of integration of methods of strategic management into a subsystem of management of innovative activity of the enterprise is considered [6]. The application of the model allows to reconcile the innovative process of economic entities with strategic development goals. 3 At the heart of any strategy are economic attitudes. In the system of managing innovation growth, there are four types of target economic installations:

- creation of new, more competitive products;
- creation of new technology and advanced technologies;
- development of new markets and technologies;
- creation of a new production management system.
3 Results

The organization of management of innovative activity is carried out by means of methods that ensure the development and implementation of innovations in the enterprise. In connection with the submitted target economic guidelines, the following methods of managing innovative activity based on the formation of an innovation growth strategy:

- Method based on the formation of the strategy of extensive innovative growth (creation of new, more competitive products). Research R & D is being carried out, corporate research institutes and venture funds are being established, profile research teams are being attracted, small innovative companies are being bought, diversification is being made towards high-tech fast-growing segments of the market, an active patent-licensing policy is underway, and new products are constantly being created.

- Method based on the formation of a strategy of intensive innovation growth (creation of new technology and improved technologies). The equipment is updated, ready-made
technological lines and technologies are purchased, third-party technologies are localized or introduced, research units are created whose task is to develop original products based on borrowed technologies, search for new or unoccupied market niches, and introduce computer-aided design systems.

- Method based on the formation of a strategy of diversification innovation growth (development of new sales markets and technologies). New distribution and distribution networks, logistics chains are being built, marketing policy is being developed, changes in the structure are taking place, including the formation of vertically integrated branches and representative offices, packaging and product design are changing, the range of products is being updated and expanded.

- Method based on the formation of a strategy of radical innovation growth (creation of a new organizational structure of the enterprise, production management system). Relations between departments are structured, there is an intensification of the role of planning and budgeting, personnel are updated, computerized processing of management information.

In this case, the methods represent the developed ways of influencing innovation activity in order to obtain an innovative effect. The expediency of applying this or that method depends on the task that is at this stage of the organization of the innovation process. The choice and justification of the preferred innovation growth strategy for each enterprise begins with the compilation of a list of possible basic and alternative strategies. Such a choice is made on the basis of the formation of strategic goals, analysis of the state of enterprises and the external environment, analysis of innovation potential and innovation activity. The algorithm for selecting and implementing an innovation growth strategy is shown in Figure 3.

1. Stage goal setting:
   - Establish the goals of the development and functioning of the organization, which emphasizes the focus on innovation;
   - Formulate the directions of innovative growth of the organization. A goal tree is constructed and calculated.
2. The stage of strategic analysis:
   - The internal environment of the organization is analyzed and innovative potential is assessed;
   - the state of innovative activity of the enterprise is analyzed;
   - the innovative position of the organization is determined.
3. The stage of choosing directions of the strategy of innovative growth: – the selection and evaluation of alternative innovative strategies;
   - The preferred innovative strategy is chosen and formulated.
4. The stage of implementation of the strategy of innovative growth:
   - the strategic control of the project implementation process is organized;
   - The efficiency of the implementation process is assessed and the necessary adjustment of the innovation growth strategy is carried out.
Fig. 3. Algorithm for selecting and implementing the strategy innovative growth of the enterprise.

4 Discussion

The most cost-effective change in the introduction and implementation of innovation reflects economic added value (EVA). Using the indicator of economic added value, we will present an optimization model for estimating the value of an enterprise implementing an innovation growth strategy:

$$\text{EVA} = (P - T) - IC \times \text{WACC}$$

where $P$ - profit of the enterprise from the operating activity of the enterprise, rubles; $T$ - taxes and other mandatory payments, rubles; $IC$ - costs of innovation, rubles; $\text{WACC}$ - weighted average cost of capital,%. Economic added value arises in the company in the event that for a given period of time it was possible to earn the return on invested capital higher than the rate of return of the investor. The positive value of EVA means the increase in market value compared to the carrying value of net assets and the effective implementation of the strategy of innovative growth. With a negative or zero EVA, the strategy is not effective. The
The introduction of innovations is a complex and lengthy process, which requires the enterprise not only to have investment resources, but also the innovative activity of the production system. It is necessary to assess and form centers of innovation activity at the enterprise to increase its innovative growth [7].

The purpose of the formation of innovation activity centers is to create objective conditions for industrial, economic and innovative growth that can provide an effective solution to the problems of enterprises and increase their innovative potential. The result of the formation of centers of innovative activity of enterprises is the stability and efficiency of their operation, increase in profits, innovative growth of the enterprise. The function of innovation activity centers is to ensure the ability of the enterprise to maintain a balance and sustainability of innovative growth in the long term [8].

Analysis of approaches to management of innovative growth has shown that in modern economic conditions the target benchmark for increasing the value of an enterprise is more universal than profit maximization, since the growth of invested capital can occur without significant changes in the amount of profit received by the enterprise, manifested in the growth of the value of intangible assets or value enterprise. Evaluation of the effectiveness of the strategy of innovative growth of an enterprise on the basis of its value shows the current and long-term goals of the enterprise development taking into account the increase of the efficiency of its innovative activity.

5 Conclusions

The carried out research allows to draw a conclusion that theoretical and methodological problems of developing management methods for innovative activity of enterprises based on the principles of integration of management of strategic and innovative processes are of great economic importance, the solution of which is very relevant. The ability to implement the strategy of innovative growth and the practical use of innovations becomes a necessary condition for achieving high-quality economic growth, scientific and technological progress and high competitiveness of the enterprise.

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