Methodological aspects of optimization of small enterprises in modern conditions of the Russian economy

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Abstract. The work studies the problems of the theory and methodology of the formation of methodological approaches to improving the efficiency of small innovative enterprises, creating the necessary conditions for effective functioning, improvement of the state, and competitive recovery of enterprises. The research is related to the identification of peculiarities and regularities of development of enterprises in innovative small business in the conditions of global competition, the assessment of their status and interactions with external organizations, the determination of the ways of improving the state and conditions of development, selection of directions for improvement.

1 Introduction

The easiness of production reorientation, the innovativeness of products, quick response to market needs, the possible achievement of maximum efficiency and many other factors predetermine one of the main priorities of the modern Russian economy – creating conditions that ensure the fundamental development of small and medium-sized businesses. At the same time, in this economic sector innovation and technological production activities of enterprises are the most relevant. In order to increase the
efficiency of innovative small and medium-sized businesses, the government support and protection of the interests of small and medium-sized innovative enterprises, aimed at providing competitive advantages, are needed. This will allow to ensure the growth of potential, to increase the share of high-tech products, to develop a system of support measures, as well as trade-economic, organizational, financial, information and consulting tools. In solving the problem of ensuring dynamically sustainable development of the enterprise, the primary role is played by innovations and innovative activity, capable of providing not only the renewal of the production base, but also the introduction of modern innovative technologies in the management system. The innovation activity of a small enterprise is determined by the objective need of the development of science and technology, regulations of market relations connected with the orientation of economic entities towards demand and increasing market needs, aggravation of competition and increasing complexity of economic ties. In this regard, the study of formation and development of competitive innovative small and medium-sized businesses is relevant because understanding of the influence of certain elements of innovation policy will enable to develop the capacity of innovative small and medium-sized businesses. The insufficient development of theoretical and methodological foundations and problems connected with methodological approaches to improvement of the performance of small innovative enterprises predetermined the relevance of the chosen research topic.

2 Problem statement

The research is based on the proceedings and works of foreign and Russian authors devoted to development and implementation of an innovative strategy at small-sized enterprises, for instance such as the enterprises of Technopark of Irkutsk National Research Technical University, and the development trends described in the works of A.S. Nechaev [1-3] and the authors of this paper [4,5]. The authors used materials, documentation and standards of Technopark of Irkutsk State Technical University (small innovative enterprises). Despite the significant amount of work related to various aspects of the work of small and medium-sized businesses, including innovative ones [9,13,15], a number of theoretical and practical issues related to the problem are debatable and require further study. For example, elements of formation of methodological approaches to improving the efficiency of small innovative enterprises have not been sufficiently
developed. The scientific hypothesis consists in the idea of creating methodological approaches to improving the efficiency of small innovative enterprises\[12, 14\], allowing one to justify the priorities of the mentioned process and to develop recommendations for its improvement. The object of the research is the methods and tools to substantiate the ways of improvement of the performance of small innovative enterprises. The subject of the study is a set of organizational and economic management relations in the process of forming methodological approaches to improving the efficiency of small innovative enterprises. The theoretical and methodological basis of the research is the modern experience in the functioning of small innovative enterprises. During the study, methods of economic-statistical, systemic, comparative analysis, the method of structuring, logical methods, methods of classification and construction of the typology, logical-theoretical analysis were used. The theoretical basis is the proceedings of Russian and foreign scientists devoted to the theory and practice of innovation activity, methods of evaluating the economic efficiency and sustainability of small innovative enterprises, the development of methodological approaches to improving the efficiency of management decisions and the work of small innovative enterprises \[2,3\]. The theoretical basis also includes the provisions of labor and civil legislation, federal and regional regulatory documents on the regulation of the activity of small innovative enterprises. The empirical basis consists of the statistical materials of the Federal State Statistics Service of the Russian Federation, the reporting data from one of the university’s technoparks, the information materials published in periodical and economic publications of Russia and other countries, the data from Internet resources, as well as the results of authors’ research and calculations \[1,6\].

3 Purpose

The aim of our work is to develop theoretical and methodological approaches that will improve the efficiency of small innovative enterprises in the modern economy in Russia.

4 Results and discussion
The results were obtained during the analysis of the materials of statistical agencies and agencies that consolidate statistical reports from enterprises in the region every year. The purpose to summarize and develop the theoretical and methodological aspects of creating a methodological approaches to improving the performance of small innovative enterprises has predetermined the following tasks which should be solved during the research:

- to explore theoretical approaches to the essence of the concept, types and classification of small enterprises and its innovation activities;
- to take into consideration foreign experience in management and operation of small innovative enterprises;
- to determinate and justify the main ways and methods of management and support of small innovative enterprises;
- to study the motivational aspects of the innovation activity of small business entities;
- to offer a systematic approach to improving the performance of innovative small businesses;
- to develop criteria and indicators of financial efficiency for evaluating the performance of small innovative enterprises;
- to propose a cluster mechanism for improving the efficiency of small innovative enterprises;
- to substantiate the reserves for improving the efficiency of innovative activities and their classification;
- to recommend a methodology for quantitative assessment determination of reserves for improving the efficiency of innovation activity.

The mechanisms of innovative development, innovative infrastructure and features of the use of intellectual property are described in the works of E.S. Andreeva, A.S. Nechaev [7,8].

Optimization and scientific novelty of the paper consists in the complex theoretical and methodological development of methodological aspects of creation of methodological approaches to improving the efficiency of small innovative enterprises and developing recommendations for their improvement. The most significant provisions, conclusions, results and recommendations in creation of methodological approaches to improving the efficiency of work, having scientific novelty, and their substantive basis are the following:

1. It has been established that the objects of innovation activity are not only products/services and processes, but also technologies. Therefore, the following definition of innovation activity has been formulated: innovation activity is a system of measures aimed at creating and implementing innovation activity objects – new or improved types of products/services,
new or improved technology and new or improved processes to make a profit or other useful result, to achieve competitive advantages and sustainable enterprise development.

2. Main forms and methods of innovation activity management have been determined as a set of documentation and a specific list of quantitative indicators. The main documents are: a report on the status of the project; a report structure according to a standard project; a report structure for a complex project; a monthly project progress report; an information note on the project status; an employee’s weekly plan; a construction journal; a report of the employee on the work done during the month.

3. The identification of such criteria and assessment indicators in the list of quantitative indicators of innovation management, such as: the net cash flow of a small innovative enterprise (SIE); SIE cost; a capital structure; the structure of financial liabilities of SIE by liquidity; a SIE assets structure; current cost structure of SIE; the level of concentration of financial operations in high-risk areas, as well as relative indicators-constants calculated based on absolute criteria and evaluation indicators.

4. A systematic approach to improving the performance of innovative small business enterprises has been proposed, including:
   • a system of indicators characterizing the efficiency of a small business and forming the first subsystem;
   • the risk system of conducting an innovative small business, forming the second subsystem;
   • indicators of investment attractiveness of a small business, forming the third subsystem;
   • elements included in the subsystems (indicators for assessing the efficiency and investment attractiveness and other components of this difficulty).

5. Criteria and indicators of financial performance evaluation of small innovative enterprises have been developed, forming a system of indicators, including profitability indicators, indicators of business activity, indicators of financial stability, which can be calculated according to the balance sheet and report on financial results based on the reporting of small innovative enterprises.

6. Reserves for improvement of the efficiency of small innovative enterprises have been revealed and substantiated, including: the influence of factors associated with the reduction of expenditures and increase of profitability; leveling of various types of risk, forming a system of risk indicators in the set of factors, particular indicators of factors and methods.

7. Methodology for determining the quantitative assessment of reserves for improving the efficiency of innovation activity has been recommended in
the mixture of the following components, implemented sequentially in three stages:

1st stage – calculation of the net cash income by the innovative solution to assess quantitative factors and reserves.

2nd stage – estimation of the reserves for increasing efficiency during implementation of an innovative solution, taking into account factors of external and internal environment.

3rd stage – assessment of the quality of an innovative solution from the viewpoint of realization of reserves for increasing the efficiency of innovative activity of an enterprise.

The authors have obtained the following results:

1. Within a small business, an important component is the delimitation of small and medium-sized enterprises, as well as identification of micro-enterprises, which is possible using quantitative, qualitative and combined approaches to the definition of small and medium enterprises, and which are used in the regulatory documents and in special literature.

2. It has been revealed that the objects of innovation activity are not only products/services and processes, but also technologies. In this regard, the following definition of innovation activity has been formulated and proposed: innovation activity is a system of measures aimed at creation and implementation of innovative activity objects — new or improved kinds of products/services, new or improved technology and new or improved processes for the purpose of obtaining profit or another useful result, achieving competitive advantages and ensuring sustainable development of the enterprise.

3. The foreign experience in the field of innovative small business entrepreneurship should be divided into some areas:
   • experience in the field of government regulation;
   • experience in creating extra jobs;
   • experience in reducing administrative barriers;
   • experience in the use of universities;
   • experience in export orientation.

4. Types of small enterprises dependance on the criteria of division - the nature of the issue, the content of specific tasks (works), the kind of products, place of creation, level of development — can be the following:
   • economic, social, environmental;
   • scientific and technical, scientific and production (technical), consulting, implementation, intermediary;
• enterprises engaged in development and exploration of products for industrial purposes;
• enterprises producing consumer goods;
• enterprises developing and mastering intermediate products, semi-finished products, component parts and products;
• SIEs in the administrative structure of large research institutes and scientific development and production centers;
  • shadow SIEs;
  • SIEs of a self-sustaining administrative unit;
  • high-capacity SIEs and free floating SIEs;
  • SIEs at universities;
  • life-sustaining and fast-growing.

5. A set of documentation and a specific list of quantitative indicators can be used as ways and methods of managing innovation activity. The main documents are: a report on the status of the project; the structure of the report on a complex project; a monthly report on the progress of works on the project; an information note on the status of the project; an employee’s week plan; a construction journal; a report of the employee on the completed work during the month.

6. It seems reasonable to single out the following criteria and evaluation indicators: net cash flow of SIE; SIE cost; the capital structure; the structure of financial liabilities of SIE on liquidity; the SIE assets structure; the current cost structure of SIE; the level of concentration of financial transactions in high-risk areas.

7. The government regulation of the innovation policy represents a system that includes: taxation, crediting, depreciation policy, insurance, a system of federal and regional government orders, privatization, infrastructure, finance of commercial structures, etc. To increase the effectiveness of the system and mechanisms of state support for innovative small businesses we propose:
  • improving state support mechanisms;
  • improving and harmonizing the legislative framework;
  • improving the information support of the authorities and entrepreneurs.

8. The motivations for encouraging innovation should be considered in two aspects: the motivational mechanism or the incentive mechanism of the enterprise as a whole and the motivational incentive programs for the staff.

For the real stimulation and development of the managers’ motivation for introduction of innovations, it is necessary to use a whole range of compensation instruments, such as wages and bonuses, to encourage the effective activity of the enterprise. It is also efficient to use a stock option as an encouragement of the manager which guarantees the right to buy the
company shares at par. Such a way is a significant part of the total income with a good market situation.

Standard “Motivation and staff incentives” should be developed at enterprises for the successful implementation of innovation policy in small business. Standard “Motivation and Incentives for personnel of the ISU Technopark” has been proposed as the example [10-11].

9. Partnership of large and small enterprises for implementation of innovation projects is more feasible using a cluster approach, as well as non-profit partnership.

10. A system approach to the problem of improving the efficiency of a small innovative business may include:
   • a system of indicators characterizing the efficiency of small business and forming the first subsystem;
   • a risk system of conducting innovative small business, forming the second subsystem;
   • indicators of the investment attractiveness of small business, which form the third subsystem.
   • elements included in the subsystems (indicators for assessing the effectiveness and investment attractiveness and other constituents of the component of this problem).

11. Analysis of innovative small business in Irkutsk region showed that practically detailed and sufficient analysis based on reporting has not been carried out, and only two indicators have been used for evaluation - the volume of work and investment.

A system of indicators, which is the most correct and suitable for calculating the financial efficiency of small innovative enterprises, includes not only profitability indicators, but also indicators of business activity, financial stability, which can be calculated by the balance sheet and income statement formed by the reporting of small business innovative enterprises.

12. The identification and justification of reserves for improving the efficiency of small innovative enterprises are connected with:
   • firstly, with the influence of factors associated with the cost reduction, the increase in profitability;
   • secondly, with the leveling of various types of risk, reducing the impact of which can significantly improve efficiency.

13. The system of risk indicators should include factors, private indicators of factors and methods. The private indicators in the mixture of factors may be individual for separate small enterprises, as well as they may be supplemented with specific indicators and methods of their calculation, more specific selection methods reflecting branch (subsectoral) and regional features, purpose, sources of formation of innovative solutions.
14. Groups of indicators/factors of revealing the reserves for increasing the efficiency of small innovative enterprises can be: scientific and technical; institutional; production and technological; financial and economic; social; environmental; branch (regional); legal; organizational and informational; market (marketing). For each group of factors, a specific set of private indicators is assumed for each group. It can be different for individual small innovative enterprises depending on the specific features of the sectoral purpose and the profile of enterprises, goals of selecting innovative solutions, stages of their implementation and sources of formation.

15. The factors that form the innovation activity of enterprises are divided into internal (related to the enterprise) and external (independent of the enterprise). The reserves are determined due to these factors. In turn, external factors are divided into direct and indirect. For a general assessment of the influence of factors on an innovative solution due to its feasibility and the identification of reserves for improving efficiency, the magnitude of the points is calculated taking into account the weighting coefficients of significance. The assignment of points is carried out for each indicator based on expert evaluation.

16. The method of quantitative assessment of reserves for improving the efficiency of innovation activity can include the following components and is carried out in stages:

1st stage – calculation of the net cash income for the innovative solution to assess the quantitative factors and reserves;

2nd stage – assessment of the reserves for improving efficiency in the implementation of an innovative solution, taking into account external and internal environment factors;

3rd stage – assessment of reserves for improving efficiency in the implementation of an innovative solution, taking into account external and internal factors.

The development of methods for using reserves to increase the efficiency of innovative activity in educational institutions and academic research enterprises consists in the creation of small enterprises at universities and scientific institutions and the development of commercialization of developments in these small enterprises.

17. A powerful tool for stimulating innovation policy and increasing its own sources of financing is a tax policy.

To increase the effectiveness of innovative projects, the following tax policy measures should be applied:

• in terms of VAT, to extend exemption from taxation (to enter a lower VAT rate) to all enterprises implementing projects at the expense of various sources of financing;
the value of the investment tax credit during implementation of innovation activity should be set in proportion to the absolute or incremental values of R & D; 
- including the use of tax holidays for several years on profits from the implementation of innovative projects; 
- other benefits for income tax.

5 Conclusion

Studies related to identification of peculiarities and regularities of development of regional innovation-type enterprises in conditions of global competition, assessment of their state and interactions with external organizations, identification of ways to improve the state and conditions of development, the choice of areas for improvement are vital and of great importance for the economy generally. In our work, we have demonstrated and investigated the problems of the theory and methodology of the formation of methodological approaches to improving the efficiency of such regional innovative enterprises. The solution of these problems will help create the necessary conditions for effective functioning, improvement of the condition, increase of competitiveness of regional innovative enterprises. We suppose that our methodological approaches can be applied in other countries.

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