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## **EVALUATION OF EFFICIENCY OF INNOVATION PROJECTS**

**Summary.** *The article the theoretical and methodological approaches to the evaluation of the investment providing of innovative activity of enterprises are defined and system of indicators are offered. It is defined that the volume of investments directed to financing innovative projects depends on many factors: the size of the enterprise; the expected profitability and riskiness of investing in alternative to innovative activities of the enterprise (in particular, the production of traditional types of products); the expected profitability and riskiness of investing in this innovative project; the existing and those that by the need of the enterprise can attract the volumes of investment resources. The types of the economic effect of investing in the innovation activity of the enterprise and their interrelation are considered. In particular, the current effect of innovation; the retrospective effect of innovation; the predictive effect from the implementation of innovation activity; the cumulative current effect of innovation; the cumulative retrospective effect of the innovation activity; the cumulative predictive effect of the innovation activity; the cumulative effect of the innovation activity. It is proved that the above-mentioned indicators for assessing the economic effect of investing in innovative activities should create the appropriate level of informational support for the process of managing innovation activity at the enterprise, which will allow owners and managers to*

*receive timely, complete and accurate information on the progress of implementation of innovative projects implemented by the enterprise and the expected indicators of those innovative projects to be implemented in the future. The key aspects of the application of the indicator of the cumulative effect of the implementation of innovation activity are substantiated.*

**Key words:** *innovative project, innovation activities, investing, indicators, the economic effect of investing in innovative activities.*

**Statement of the problem.** In the conditions of dynamic changes of the market environment, the requirements for assessment and economic justification for decision-making regarding the implementation of innovative projects are increasing.

**Analysis of recent researches and publications.** The works of many domestic and foreign scientists have been devoted to the problems of investment and innovation development of enterprises, in particular, the evaluation of the efficiency of investing innovative projects: M. Denisenko [1], A. Kuznetsova [2], I. Skvortsova [3], M. Khuchek [4], J. Schumpeter [5] and others.

The synthesis of literary sources suggests that there are a number of scientific approaches to determining the effectiveness of investment and innovation projects [1-5], the overwhelming majority of which makes it possible to evaluate the effectiveness of the project only after its implementation. In addition, most of the techniques involve the processing of significant amounts of analytical information, which is virtually impossible to gather in terms of unpredictable market of new innovative product.

**Formulation purposes of article (problem).** The purpose of the study is to substantiate and develop recommendations for improving the methodology for evaluating the effectiveness of innovative projects of enterprises based on the proposed system of indicators.

**The main material.** Ensuring of innovative development of domestic business entities, above all, depends on availability and accessibility of various sources of investment resources. In modern realities, due of limited investment in industrial enterprises, there is a need an effective redistribution of them in different innovative directions and projects both before and during the implementation process.

The volume of investments directed to financing innovative projects depends, first of all, on many factors: the size of the enterprise; the expected profitability and riskiness of investing in alternative to innovative activities of the enterprise (in particular, the production of traditional types of products); the expected profitability and riskiness of investing in this innovative project; the existing and those that by the need of the enterprise can attract the volumes of investment resources. Consideration of these factors will enable a comprehensive approach to evaluating the effectiveness of investments in innovation activity of enterprises.

For assessing the effectiveness of investment support for innovation activities, need to compares of the amount of innovation costs with the amount of financial results that the enterprise will receive from its implementation.

In this case, it is necessary to solve the following tasks:

1. Determination of the length of the time during which the comparison is performs. This time interval should be sufficiently large, taking into account the specificity of innovation activity. If for a certain year the value of innovative costs exceeds the financial results of the company's innovation activity, then in general this does not indicate that the innovative activity of the company is ineffective. Indeed, such activities are characterized by a significant level of risk, and the presence of a time lag between the moment of investing and obtaining a result from its investment. Consequently, the duration of the time period during which the comparison of innovation costs with the results

from the implementation of innovation activities should be several years (on average, not less than 5-10).

2. Determination of the value of financial results from the implementation of innovation activities. The conducted research shows that in the process of comparing the innovative costs of an enterprise with the size of financial results from the implementation of innovation activity as the latter it is expedient to accept the amount of discounted at the present moment of net cash flow (the amount of profits and depreciation) from investing in a particular direction of innovation activity of the enterprise.

3. Determination of the duration of the investment lag, that is the time interval from the start of investment in the development of new (improved) products until the beginning of receipt of income from their production. The duration of such a period of time at the stage of the preliminary assessment of the efficiency of investing in the innovation activity of the enterprise may be taken at the average level on the retrospective data on similar innovative projects that were implemented earlier by the given enterprise and (or) other enterprises of the industry.

4. Selection of integral indicator for assessing the effectiveness of investment support for enterprise innovation. As such indicator, it is advisable to adopt the most generalized indicator for evaluating the effectiveness of investment (in particular, innovative) projects, the net present value of the expected return on the project.

Taking into account the foregoing, it is possible to propose the following indicators for assessing the economic effect of investing in innovative activities of the enterprise:

- the current effect of innovation, which characterizes the net current value of those innovative projects that began to generate income in a given period (year);

- the retrospective effect of innovation, which characterizes the accumulated amount of net present value of those innovative projects that began to generate income in a certain prior period (in a year);
- the predictive effect from the implementation of innovation activity, which characterizes the present (discounted) value of the net present value of those innovative projects that, according to the prediction, will start to generate income in a certain subsequent period (in a year);
- the cumulative current effect of innovation, which characterizes the net present value of those innovative projects that began to generate income over several consecutive periods (years);
- the cumulative retrospective effect of the innovation activity that characterizes the amount of net present value of those innovative projects that have started to generate income for several successive previous periods (years) accumulated at the moment;
- the cumulative predictive effect of the innovation activity, which characterizes the discounted value of the net present value of those innovative projects that, according to predicted estimates, will begin to generate income over several consecutive previous periods (years);
- the cumulative effect of the innovation activity, which represents the sum of the values of the indicator of the aggregate retrospective effect and the cumulative predictive effect of the innovation activity of the enterprise.

Among the proposed indicators are integral ones, the role of which can be described as follows:

The indicator of the cumulative current effect from the implementation of innovation activity for a certain retrospective period gives an opportunity to provide averaged over this period information on the effectiveness of investment of innovative projects implemented by the enterprise. If the value of this indicator is greater than zero, then it is possible to draw a preliminary conclusion

that in general investment of investment resources into the innovative activity of the company was successful.

The indicator of the cumulative retrospective effect from the implementation of innovation activity makes it possible to take into account the time factor in assessing the efficiency of the company's innovative costs incurred. In general, the more successful innovative projects were implemented in the first half of the retrospective segment, the higher value of the total retrospective effect of the implementation of innovation activities would be. Thus, the indicator of the total retrospective effect enables to assess the effect of the company's innovation costs taking into account the time distribution of both these costs and financial results from the implementation of enterprise innovation projects. At the same time, the value of the cumulative retrospective effect is not a direct basis for making future investment decisions regarding further investment of the innovation activity of this enterprise.

The indicator of the cumulative predictive effect of the implementation of innovation activity makes it possible, with a certain level of probability, to estimate the volumes of further investment of the innovation activity of the enterprise. If the value of this indicator is greater than zero, then it can be concluded that it is advisable to continue investing in the implementation of innovative projects by the enterprise.

The indicator of the cumulative effect of the implementation of innovation activity makes it possible to carry out an integrated assessment of the efficiency of investment support for the innovation activity of the enterprise both in the past and in the future. It should be noted a somewhat paradoxical phenomenon, namely, in other equal conditions, the growth of the magnitude of the total retrospective effect (and this is possible, first of all, when the effectiveness of innovation activity at recent intervals is relatively low compared with earlier periods of time) may indicate deterioration of predictive indicators the cumulative effect of the implementation of innovation activity (if the trend of

the level of efficiency of the innovation activity of the enterprise will last in the next predictive periods). Therefore, the indicator of the cumulative effect of the implementation of innovation activity makes it possible to provide a comprehensive assessment of its efficiency over the entire period during which the enterprise (or its specific owner) will innovate.

It is expedient to determine the duration of the retrospective period within a period of time during which the owner of an enterprise finances innovation activity and, accordingly, assess the amount of innovative costs and results from its implementation, depending on its share in the authorized capital of the enterprise. In other words, if a certain investor, a co-owner of an enterprise, invests in its innovative activities for several previous years and plans to invest in the next several years (the predicted period), then he must get a final assessment of how much such investment will generally be expedient and effective. For the solution of this problem, the application of the indicator of the cumulative effect of the innovation activity implementation has been proposed. The value of this indicator is an integrated assessment of the efficiency of investment support of the innovative activity of the enterprise, taking into account both retrospective and predictive estimates.

**Insights from this study and perspectives for further research in this direction.** The above-mentioned indicators for assessing the economic effect of investing in innovative activities should create the appropriate level of informational support for the process of managing innovation activity at the enterprise, which will allow owners and managers to receive timely, complete and accurate information on the progress of implementation of innovative projects implemented by the enterprise and the expected indicators of those innovative projects to be implemented in the future. The perspectives for further research in this direction are related to the formation of the monitoring system as a function of innovative management.



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