

Iastremska O.

*Doctor of Economics, Professor,
Head of the Department of Management, Logistics and Economics,
Simon Kuznets Kharkiv National University of Economics, Ukraine;
e-mail: Iastremska_om@hneu.net; ORCID ID: 0000-0002-5653-6301*

Strokovych H.

*Doctor of Economics, Associated Professor,
Professor of the Department of Management, Logistics and Economics,
Simon Kuznets Kharkiv National University of Economics, Ukraine;
e-mail: annastrokovych@gmail.com; ORCID ID: 0000-0002-5092-9059*

Iastremska O.

*Ph. D. in Economics, Associated Professor,
Associated Professor of the Department Tourism,
Simon Kuznets Kharkiv National University of Economics, Ukraine;
e-mail: Iastremska.o@gmail.com; ORCID ID: 000-0003-1865-0282*

Amit Kumar

*Doctor of Finance, M.B.A (Finance), Master of Commerce, Assistant Professor,
Department of Commerce & Business Management, Integral University, Lucknow, U. P., India;
e-mail: amitgoel53@gmail.com; ORCID ID: 0000-0002-7840-0376*

THE TARGETED COMPLEX PROGRAMME OF INVESTMENT AND INNOVATION DEVELOPMENT OF ENTERPRISES: SUGGESTIONS FOR FORMING AND IMPLEMENTING ACTIVITIES

Abstract. The problem of the article is to identify the main stages, methods, organizational structures of formation and implementation of targeted complex programs for the development of investment and innovation activities of industrial enterprises, the implementation of which will contribute to the success of strategic management of economic resources. The purpose of the article is to develop proposals for the formation and implementation of a targeted complex program for the development of investment and innovation activities of the enterprise. The object of research is the development of investment and innovation activities of the enterprise. The subject of research — theoretical provisions, methodological support, tools for the formation and implementation of targeted programs for the development of investment and innovation activities of enterprises. Structural-logical analysis, theoretical generalization, statistical-analytical analysis, expert survey method, program-target management method were used as research methods.

Based on the analysis, the stages of formation and implementation of the target complex program of investment and innovation activities of the enterprise are proposed, which include: competitive selection and appointment of responsible executors, identification of existing problems of investment and innovation activities and their complex analysis, formulation of the main objectives of the program and their structuring by hierarchical dependence, definition and development of measures to achieve alternative goals, formation of program options taking into account alternative measures, substantiation of financial and human resources according to the established criteria for program implementation, discussion and approval, coordination of program measures and volumes of financing with the existing plan of development of the enterprise for the corresponding certain term. For each proposed stage, a study was conducted on the example of 21 machine-building enterprises for 2015—2019, which proved the feasibility of the developed proposals. The practical orientation of the research results is confirmed by the calculations for the developed complex program of investment and innovation activities for the machine-building enterprise using real data and comparison of the expected results of the program with the actual ones, which testified to the growth of investment and innovation activities.

Keywords: targeted complex program, development, investment and innovation activities, goals, measures, alternatives, constraints on financial and human resources.

JEL Classification O12, O14, O16, O25, O32

Formulas: 0; fig.: 2; tabl.: 5; bibl.: 17.

Ястремська О. М.

*доктор економічних наук, професор,
завідувачка кафедри менеджменту, логістики та економіки,
Харківський національний економічний університет імені Семена Кузнеця, Україна;
e-mail: Iastremska_om@hneu.net; ORCID ID: 0000-0002-5653-6301*

Строкович Г. В.

*доктор економічних наук, доцент,
професор кафедри менеджменту, логістики та економіки,
Харківський національний економічний університет імені Семена Кузнеця, Україна;
e-mail: annastrokovych@gmail.com; ORCID ID: 0000-0002-5092-9059*

Ястремська О. О.

*кандидат економічних наук, доцент, доцент кафедри туризму,
Харківський національний економічний університет імені Семена Кузнеця, Україна;
e-mail: Iastremska.o@gmail.com; ORCID ID: 000-0003-1865-0282*

Аміт Кумар

*доктор фінансів, магістр ділового адміністрування (фінанси), майстер комерції,
доцент кафедри комерції та управління бізнесом, Інтегральний університет, Лакнау, Індія;
e-mail: amitgoel53@gmail.com; ORCID ID: 0000-0002-7840-0376*

ЦІЛЬОВА КОМПЛЕКСНА ПРОГРАМА РОЗВИТКУ ІНВЕСТИЦІЙНО-ІННОВАЦІЙНОЇ ДІЯЛЬНОСТІ ПІДПРИЄМСТВ: ПРОПОЗИЦІЇ ДО ФОРМУВАННЯ ТА РЕАЛІЗАЦІЇ

Анотація. Проблематика статті — виявлення основних етапів, методів, організаційних структур формування і реалізації цільових комплексних програм розвитку інвестиційно-інноваційної діяльності промислових підприємств, упровадження яких сприятиме успішності стратегічного управління економічними ресурсами суб'єктів господарювання. Мета статті полягає в розробленні пропозицій з формування та реалізації цільової комплексної програми розвитку інвестиційно-інноваційної діяльності підприємства. Об'єктом дослідження є розвиток інвестиційно-інноваційної діяльності підприємства. Предметом дослідження — теоретичні положення, методичне забезпечення, інструментарій формування і реалізації цільових програм розвитку інвестиційно-інноваційної діяльності підприємств. Методами дослідження використано структурно-логічний аналіз, теоретичне узагальнення, статистико-аналітичний аналіз, експертний метод опитування, метод програмно-цільового управління.

На основі проведеного аналізу запропоновано етапи формування і реалізації цільової комплексної програми розвитку інвестиційно-інноваційної діяльності підприємства, до складу яких запропоновано включити: конкурсний відбір і призначення відповідальних виконавців, визначення наявних проблем розвитку інвестиційно-інноваційної діяльності та здійснення їхнього комплексного аналізу, формулювання основних цілей програми та їхня структуризація за ієрархічною залежністю, визначення і розроблення заходів з досягнення цілей, що можуть бути альтернативними, формування варіантів програми з урахуванням альтернативних заходів, обґрунтування обсягів фінансових і людських ресурсів за сформованими критеріями для реалізації програми, її обговорення й ухвалення, узгодження заходів програми й обсягів фінансування з чинним планом розвитку підприємства на відповідний визначений термін. За кожним запропонованим етапом проведено дослідження на прикладі 21 машинобудівного підприємства за 2015—2019 рр., що довело доцільність розроблених пропозицій. Практичну спрямованість результатів дослідження підтверджують наведені розрахунки за розробленою цільовою комплексною програмою розвитку інвестиційно-інноваційної діяльності для підприємства машинобудування з використанням

реальних даних і порівняння очікуваних результатів за програмою з фактичними, які засвідчили зростання показників розвитку інвестиційно-інноваційної діяльності підприємства.

Ключові слова: цільова комплексна програма, розвиток, інвестиційно-інноваційна діяльність, цілі, заходи, альтернативи, обмеження за фінансовими і людськими ресурсами.

Формул: 0; рис.: 2; табл.: 5; бібл.: 17.

Ястремская Е. Н.

*доктор экономических наук, профессор,
заведующая кафедрой менеджмента, логистики и экономики,
Харьковский национальный экономический университет имени Семена Кузнеця, Украина;
e-mail: Iastremska_om@hneu.net; ORCID ID: 0000-0002-5653-6301*

Строкович А. В.

*доктор экономических наук, доцент,
профессор кафедры менеджмента, логистики и экономики,
Харьковский национальный экономический университет имени Семена Кузнеця, Украина;
e-mail: annastrokovych@gmail.com; ORCID ID: 0000-0002-5092-9059*

Ястремская О. А.

*кандидат экономических наук, доцент, доцент кафедры туризма,
Харьковский национальный экономический университет имени Семена Кузнеця, Украина;
e-mail: Iastremska.o@gmail.com; ORCID ID: 000-0003-1865-0282*

Амит Кумар

*доктор финансов, магистр делового администрирования (финансы), магистр коммерции,
доцент кафедры коммерции и управления бизнесом,
Интегральный университет, Лакхнау, Индия;
e-mail: amitgoel53@gmail.com; ORCID ID: 0000-0002-7840-0376*

ЦЕЛЕВАЯ КОМПЛЕКСНАЯ ПРОГРАММА РАЗВИТИЯ ИНВЕСТИЦИОННО-ИННОВАЦИОННОЙ ДЕЯТЕЛЬНОСТИ ПРЕДПРИЯТИЙ: ПРЕДЛОЖЕНИЯ ПО ФОРМИРОВАНИЮ И РЕАЛИЗАЦИИ

Аннотация. Цель статьи заключается в разработке предложений по формированию и реализации целевой комплексной программы развития инвестиционно-инновационной деятельности предприятия.

На основе проведенного анализа предложены этапы формирования и реализации целевой комплексной программы развития инвестиционно-инновационной деятельности предприятия. На каждом предложенном этапе проведено исследование на примере 21 машиностроительного предприятия за 2015—2019 гг., что доказало целесообразность разработанных предложений. Практическую направленность результатов исследования подтверждают приведенные расчеты по разработанной целевой комплексной программе развития инвестиционно-инновационной деятельности предприятия машиностроения с использованием реальных данных и сравнение ожидаемых результатов по программе с фактическими, которые показали позитивный результат.

Ключевые слова: целевая комплексная программа, развитие, инвестиционно-инновационная деятельность, цели, мероприятия, альтернативы, ограничения по финансовым и человеческим ресурсам.

Формул: 0; рис.: 2; табл.: 5; библи.: 17.

Introduction. The development of Ukraine's economy uses modern world trends, which develop when they join modern innovation models, which involves the intensification of investment and innovation activities in all areas. This is facilitated by the development of innovation infrastructure and financial institutions, provided by the Concept of Economic Development of Ukraine until 2030. In accordance with the set goals to ensure and improve the quality of

management of investment and innovation processes, it is necessary to use adequate management methods and forms, in particular, such as goal management, program-target management, which will ensure the focus of measures to achieve certain goals. These goals should be characterized by specific quantitative and qualitative indicators. In this regard, the importance of the formation and implementation of the targeted complex programme of investment and innovation development of enterprises, which will ensure the quality use of investment resources for the introduction of innovations of various kinds.

Research analysis and tasks assignment. Scientific discussions in modern conditions on investing in innovation, management of these processes are quite active. Researches of problems of management of investment and innovation activity are covered in such fundamental publications as [1—9], in their works questions of methods, principles of the organization managing investment in innovation are covered [1; 5], directly intensifying the implementation of innovations [3; 4; 6—8] and increasing their efficiency [2; 9]. Thus, in particular, the work [10] contains theoretical and methodological tools for substantiating investment decisions. The authors [11] consider the basic traditional and special principles of the economic mechanism of enterprise innovation. [12] study the simultaneous impact of uncertainty on capital investment and risk management.

As a separate cluster can be identified scientific publications devoted to the study of the formation and implementation of targeted complex programs (TCP) [13—17]. They cover the general stages of TCP development [13—15] without taking into account the subject or industry specifics, the basic principles of TCP construction [14], reveal typical actions for the implementation of such programs for investment and innovation management [16; 17], but do not take into account modern features use of investment capital management methods, promotion of innovations on the market.

The solution of problems in the relationship between the development of specific TCPs for the development of investment and innovation activities is insufficiently studied due to the need to take into account the peculiarities of its implementation.

The **aim** of the article is development of proposals for the formation and implementation of a targeted complex program for the development of investment and innovation activities of the enterprise.

Research results. The study of scientific publications on the formation and implementation of the TCP [13—17] allowed us to identify the following main stages. The first is the competitive selection and appointment of responsible executors for the formation of the TCP for the development of investment and innovation activities. The second is to identify the existing problems of investment and innovation development and to carry out their complex analysis. The third is the formulation of the main goals of the TCP and their structuring according to hierarchical dependence, the solution of which will ensure the development of investment and innovation activities. The fourth is identifying and developing measures to achieve goals that may be alternative. The fifth is the formation of options for TCP, taking into account alternative measures. The sixth is substantiation of the amount of financial and other economic resources according to the established criteria for the implementation of the TCP. The seventh — discussion and acceptance of TCP, coordination of its actions and volumes with the existing plan of development of the enterprise for the corresponding certain term.

At the first stage, it is advisable to determine the mission, namely the main purpose of TCP and, depending on it, to form a team to implement TCP. In terms of investment and innovation, TCP's mission is to develop it. If the company is large, it is advisable to form an appropriate organizational structure for the implementation of TCP, which is presented in *Fig. 1*. If the company has a low level of concentration of capital, namely is medium or small, it is possible to authorize an individual employee in accordance with his functional responsibilities and position or to consult a consulting firm or a consultant on targeted management.

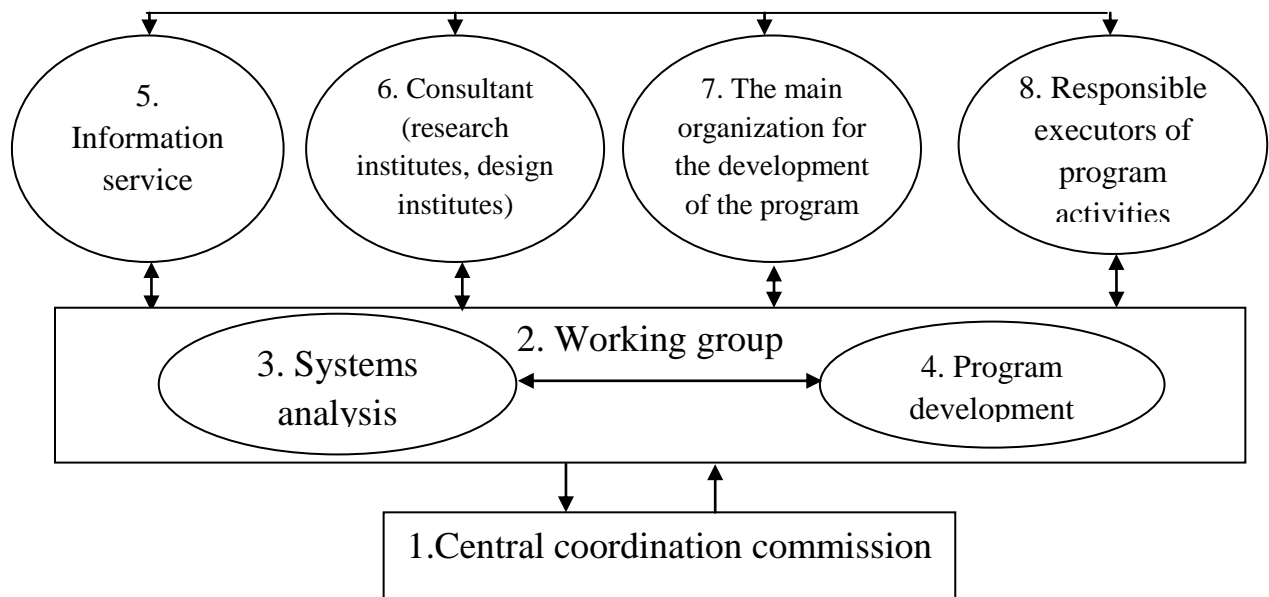


Fig. 1. A typical structure of the responsible executors relationship in the process of developing a TCP at the enterprise

The results of the study were based on data from large machine-building enterprises, so the typical organizational structure for TCP for the development of investment and innovation activities corresponds to Fig. 1. An important problem that requires solution in the process of joint work in the organizational structure created for the work of the TCP, is to ensure a creative atmosphere and mutual understanding, which can be achieved through the use of a synectic approach.

At the second stage of formation of TCP it is expedient to analyze the input information, to structure a problem of development of investment and innovation activity, to define the basic indicators of each structural unit of a problem and taking into account them to generate variants of the decision of a problem. The best source of information is official statistics on the results and status of enterprises, but the results of expert surveys can be useful, as not always the necessary information is concentrated in the forms of official statistical reporting or management accounting.

According to the results of the study at 21 machine-building enterprises for the period from 2015 to 2019, typical problems of investment and innovation development are identified, which are presented in Table 1, which is confirmed by the use of multidimensional factor analysis. innovation activity and its integrated indicators for the years that ranged from 2015 to 2019 from 0, 125 to 0.589, which are not high enough and indicates the presence of problems in the development of investment and innovation activities in the studied enterprises. Note that the presented definitions of each problem do not exhaust their content. They only identify problems, and only the decision-maker has a complete picture of their nature, relationships with other problems, and ways to overcome them.

Table 1

Typical problems of investment and innovation activities and their codes

Problem	Problem code
Lack of a defined system of indicators of the enterprise investment activity as a whole	1
Lack of financial responsibility centres	2
Insufficient quality of personnel for investment management	3
Lack of methods for evaluating the results of investment activities	4
Lack of analysis and further improvement of relationships and relationships with the external environment	5

Lack of internal consistency and clear coordination of all structural units of the enterprise involved in investment activities	6
Imperfection of the legal framework for investment activities	7
Lack of foreign investment	8
Weak reputation of the enterprise in the market	9
Logistics does not meet the requirements of scientific and technological progress	10
Insufficient investment in R&D	11
Lack of uniform regulations for investment management at all stages of the investment project life cycle	12
High cost of implementation and development of innovations	13
Intellectual property is underused	14
There is no technology audit system	15
Insufficient production of innovative products	16
There is no system to encourage staff to innovate	17
Staff turnover capable of innovation	18
Lack of innovation management system	19
Insufficient investment in the structure of capital investment to invest in innovation	20
Technology transfer opportunities are underused	21
Unsatisfactory state of innovation infrastructure	22
Unsatisfactory results of innovation	23
Unsatisfactory results of investment activity	24
Unsatisfactory results of investment and innovation activities	25

Thus, after analyzing the relationship of problems, it is necessary to determine the sequence of actions to eliminate them. The problems identified during the analysis of the reporting and the survey are interrelated causality, which allowed to determine their relationship, shown in *Fig. 2*, as well as note their typicality for industry in general and mechanical engineering in particular.

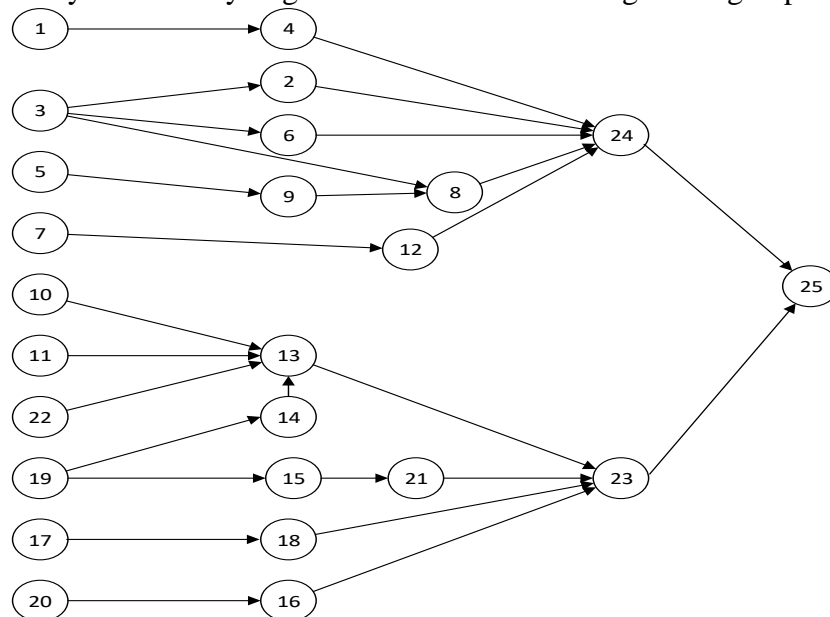


Fig. 2. The relationship of the graph of development problems of industrial enterprises investment and innovation activities

Note: the figure uses the problem codes of *Table 2*.

Average financial costs for alternative measures as of September 1, 2019

An alternative measure	The average cost of the event, UAH
Registration of intellectual property (patents, trademarks, industrial designs)	13 000
Acquisition of licenses, patents	300 000
Appeal to third-party research organizations	50 000
Expansion of the research base of the enterprise	1 520 000
Development of investment programs aimed at foreign investors	120 000
Participation in acceleration programs	50 000

Note that the solution of these problems is possible only if a number of measures are taken to partially or completely solve the whole set of problems. According to the formed schedule (*Fig. 2*) of problems of development of investment and innovative activity it is possible to draw a conclusion about its consistency.

The third stage of development and implementation of the TCP for the development of investment and innovation activities is the definition of the main objectives and their structuring, namely identifying the objectives of the second order of the TCP. At this stage, based on the analysis of the problem and based on the general structure of the TCP (goals — measures — resources), the program of investment and innovation activities should highlight the links between the general objectives of the enterprise and specific measures for investment and innovation activities of industrial enterprises. At this stage, it is advisable to compile a catalogue of TCP goals, determine the relationships between goals, build a hierarchical structure of the program goals, form local priorities, determine criteria and indicators of the degree of achievement of goals, calculate system priorities [15, p. 98]. The typical goals of investment and innovation activities development, which are typical for industrial enterprises and machine-building in particular, are as follows: development of investment and innovation activities, increase of technical equipment of the enterprise, increase of market information in the structure of capital investments for investment innovations, growth of investments in intangible assets, growth of investments in research and development, increase of technical equipment of production, attraction of foreign investments, increase of sales of innovative products, improving technology transfer, increasing the volume of production of innovative products, including for export. Comparing pairwise goals from general to partial and taking into account their priority and need to achieve, it is possible to clarify their content and indicators-criteria of achievement, which can be both qualitative and quantitative, calculated using official accounting, statistical reporting and management accounting.

For each level of goals it is necessary to establish local priorities for their achievement, which in this study was carried out by an expert method of interviewing 12 experts — heads of economic departments of the studied machine-building enterprises. The calculation of the concordance coefficient, which characterizes the agreement of experts' opinions (0.78), allows us to assert the possibility of practical use of the results of determining the priorities of the goals of all levels of the hierarchy. The probability of the concordance coefficient was checked using Pearson's criterion, the calculated value of which is 12.3, which is greater than the tabular (9.5), namely the hypothesis of the consent of experts on the significance of answers for certain purposes is accepted.

Local priorities reflect the rank of goals for objects that are directly related to the same higher-level object, that is, to determine the priorities of second-level goals in achieving the main goal, it is necessary to define system priorities. Systemic priorities are an assessment of the relative importance of achieving this goal in terms of contribution to the overall goal. To determine the system priorities, it is advisable to use an algorithm for calculating them on an ordinal scale. To this end, it is necessary to organize the values of local priorities (as a rule: from top to bottom). The resulting number determines the system priority in the ordinal scale, with the lowest number corresponding to the highest system priority. The calculation of system priorities of lower-level goals allowed us to conclude that the most important goals for achieving the general goal are to increase the level of technical equipment of the enterprise, increase the company's market awareness, increase investment

in research and development. Thus, the result of this step is to build the structure of the catalogue of goals (graph of goals).

Typical criteria for achieving the goals, which were determined taking into account the indicators of investment and innovation activity based on the results of multidimensional factor analysis, are the following: increase in the quantitative value of the generalized integrated indicator of investment and innovation activity, increase in the share of investment in advertising in total investment in innovation, increase in the share of investments in intangible assets in the total value of assets, increase in the share of expenditures on machinery, equipment and software related to innovation in the total cost of innovation, increase in the share of transferred new technologies abroad in the total volume of transferred technologies, increase in the share of new products in the total volume of production, increase in the share of new products exported in the total volume of new products.

To achieve the goals of the second level, a set of measures was developed, which are typical actions of managers for the development of investment and innovation activities of the enterprise, which are as follows: measures to update fixed assets, improve marketing strategy for market representation (brand recognition), implementation innovative technologies, registration of intellectual property (patents, trademarks, industrial designs), acquisition of licenses, patents, acquisition of innovative equipment, software, implementation of innovative management methods, development of investment programs aimed at foreign investors, participation in acceleration programs, development of new technologies for further transfer.

The fourth stage in the development of the TCP is the development of alternative complex measures. At this stage, it is proposed to determine the criteria, indicators for selecting options, constraints, alternative measures, evaluation of resources and executors of program activities. It is advisable to use financial and human resources constraints as the main constraints, which will significantly affect the set of TCP measures and limit their number, so the main condition for achieving the second level goal is the implementation of only one priority measure, which can be achieved, taking into account and analysis existing alternatives.

The research analyzed the results of investment and innovation activities of 21 machine-building enterprises of the Kharkiv region for the period from 2015 to 2019, as a result of which a set of measures was determined to ensure the achievement of the second level goals for each enterprise. The most priority measures were the acquisition of innovative equipment, software, implementation of innovative management methods, participation in acceleration programs, development of new technologies for further transfer.

The fifth stage is the formation of several options for TCP, which include one of the alternative measures. Significant limitations of financial and human resources on their competencies in the formation and implementation of TCPs and teamwork were found in the surveyed enterprises. In this regard, as a limitation for the selection of the priority option, it is advisable to allocate the following indicators: additional financial resources for the implementation of a comprehensive program; additional need for performers to implement alternative measures of the program; priority of implementing an alternative measure of the program. These constraints, which characterize the measures, determine the set of characteristics of the options of a comprehensive program.

For each alternative measure, it is advisable to conduct a feasibility study to determine the required amount of resources — restrictions on the selected indicators for the implementation of measures to develop investment and innovation activities.

Possible options for a set of measures to achieve the main goal, it is advisable to form on the basis of a choice of different combinations of alternative measures. This choice should be made in such a way that the resulting set of measures was a necessary and sufficient addition to the set of mandatory measures. In this regard, as well as to simplify the calculation part due to the fact that the mandatory measures are part of each of the options for a set of measures, further selection of the priority option should be based on a comparison of the estimated data of alternative measures.

The average costs of alternative measures as of September 1, 2019 are given in *Table 2* and formed for [6].

The average additional need for executors for the development and implementation of alternative measures of the TCP for the development of investment and innovation activities is presented in *Table 3*.

Table 3

Additional need for performers to implement alternative program activities

An alternative measure	Additional need for staff, individuals
Expansion of the research base of the enterprise	2
Development of investment programs aimed at foreign investors	1
Participation in acceleration programs	2

Among the identified local priorities of each of the alternatives, the most significant are the expansion of the research base of the enterprise and the development of investment programs aimed at foreign investors.

The sixth stage. Optimization of a set of program measures according to the criteria of the required amount of financial and human resources. Further selection of the priority option of alternative measures was made for the industrial enterprise PJSC «Vovchansky Aggregate Plant», which is characterized by the constant implementation of both investment and innovation activities and their effectiveness. UAH 1,200,000 was allocated by its management for the development and implementation of the TCP for the development of investment and innovation activities of the enterprise. According to the decision of the decision-maker, namely the Deputy Director for Economic Affairs, the ratio of funds intended for the implementation of mandatory and alternative measures is 2:1. Thus, UAH 400,000 was allocated for alternative measures. The analysis of the provided conditions and opportunities allowed to form the following restrictions: additional financial costs — not more than UAH 400,000. (based on the maximum amount of funds allocated for alternative measures for the development of investment and innovation activities for the enterprise); additional required number of human resources — no more than 2 people. To determine the characteristics of the variant of the TCP, it is advisable to adopt a method for determining the indicators of the options of the TCP by component addition, for each of the indicators of the variant of the TCP separately, the corresponding indicators of the options for each of the measures.

Thus, for the implementation of the TCP for the development of investment and innovation activities, the first option was chosen as a priority, which includes activities and responsible units, nine of which are mandatory and three were selected from the alternative. The list of measures selected for implementation and responsible units and persons for their implementation are presented in *Table 4*.

Table 4

Responsible for the implementation of measures for the development of investment and innovation activities at PJSC «Vovchansky Aggregate Plant»

Formed measures	Responsible department
Measures to upgrade fixed assets	Logistics department
Improving the marketing strategy to represent the company in the market	Marketing department
Introduction of innovative technologies	Deputy Director of Production
Registration of intellectual property (patents, trademarks, industrial designs)	Legal service
Appeal to third-party research organizations	Research and development bureau
Acquisition of innovative equipment, software	Logistics department
Introduction of innovative management methods	Human Resources Department
Development of investment programs aimed at foreign investors	Deputy Director of Finance and Sales
Introduction of technological lines for the production of innovative products	Deputy Director of Production
Development of new technologies for further transfer	Research and development bureau
Expanding the product range	Deputy Director of Production

At the seventh stage of formation of TCP the inclusion of the program in the plan of development of the enterprise and plans of activity of the corresponding divisions is provided.

In order to prove the practical significance of the developed proposals and methodological support for the formation of TCP and the effectiveness of its implementation, the calculation of the expected quantitative values of integrated indicators characterizing the investment and implementation of innovations for PJSC «Vovchansky Aggregate Plant» after the introduction of TCP, which is expected in 2021. According to the results of the survey of the Deputy Director for Economic Affairs of PJSC «Vovchansky Aggregate Plant», the desired results of changes in indicators that will characterize the investment and innovation activities after the introduction of TCP in 2021, are presented in *Table 5*.

Table 5

Actual and expected (forecast) values of partial indicators of evaluation of investment and innovation activity of PJSC «Vovchansky Aggregate Plant»

Partial indicator	Actual value of the indicator in 2019	Expected increase in the value of the partial indicator, %.	Forecast value of the partial indicator in 2021
1. The share of fixed capital investment in total capital	0,04	10	0,044
2. The share of fixed capital investment in equity	0,003	12	0,003
3. The share of capital investment in total capital	0,046	10	0,052
4. The share of capital investment in equity	0,001	20	0,001
5. The share of investment in advertising in total investment in innovation	0	18	0,001
6. The share of investment in innovation in total capital investment	0	15	0,001
7. The share of investments in intangible assets in the total value of non-current assets	0,12	13	0,144
8. The share of investments in intangible assets in the total value of assets	0,086	11	0,095
9. The share of research and development costs in the total cost of innovation	0,023	12	0,026
10. The share of costs for machinery, equipment and software associated with the implementation of innovations in the total cost of innovation	0,106	15	0,12
11. The share of the number of inventors and innovators in the average number of staff	0	16	0,001
12. The share of investments of domestic investors in the total cost of innovation	0,02	10	0,022
13. The share of shipped innovative products in the total sales	0,084	20	0,101
14. The share of shipped products, which is characterized by significant technological changes or re-introduced within three years, in the total volume of shipped products	0	14	0,001
15. The share of transferred new technologies in Ukraine in the total amount of transferred technologies	0	20	0,001
16. The share of transferred new technologies abroad in the total amount of transferred technologies	0,1	10	0,11
17. The share of new products in total production	0,020	20	0,024
18. The share of new products exported in the total volume of new products	0,016	10	0,018

Based on them, the relevant integrated indicators of investment, innovation activities of the enterprise and the generalized indicator of investment and innovation activities, taking into account the coefficients of significance of integrated. In accordance with the company's development strategy, these integrated indicators are 0, 37 for investment activities and 0, 64 for innovation.

Thus, the value of the integrated indicator of investment activity in 2021 after the implementation of the developed TCP for the development of investment and innovation activities

will be 0.3402. Prior to the introduction of the TCP in 2019, its value was 0.3041. The value of the integrated indicator of innovation in 2021 will be 0.4232, before the implementation of TCP measures in 2019, its value was 0.3689. The expected value of the generalized integrated indicator of investment and innovation activities in accordance with the corporate development strategy of PJSC «Vovchansky Aggregate Plant» after the introduction of TCP in 2021 will be:

$$0,3402 \cdot 0,37 + 0,4232 \cdot 0,63 = 0,1258 + 0,2666 = 0,3924.$$

While in 2019 its value was equal to:

$$0,3041 \cdot 0,37 + 0,3689 \cdot 0,63 = 0,1125 + 0,2324 = 0,3449.$$

In accordance with the calculated values of the generalized integrated indicator of investment and innovation activities, the implementation of the formed TCP of PJSC «Vovchansky Aggregate Plant» will increase investment and innovation at the enterprise by 13.77%, which will promote the development of investment and innovation activities. The calculations confirm the practical significance of substantiated and developed proposals for the formation of the TCP for the development of investment and innovation activities of industrial enterprises.

Conclusions. To sum up, the research allows us to draw the following conclusions. Successful development of investment and innovation activities is possible under the condition of timely formation and implementation of the relevant TCP. The developed proposals prove the feasibility of identifying seven main stages of formation and implementation of the target comprehensive program. A list of goals and measures to achieve them has been formed. Proposals for the selection of necessary and appropriate measures from alternatives have been developed, criteria for achieving the goals have been proposed, and those responsible for the implementation of each of the measures have been identified. In accordance with the calculated values of the generalized integrated indicator of investment and innovation activities, the implementation of the TCP formed by the developed recommendations at PJSC «Vovchansky Aggregate Plant» will increase the efficiency of investment and innovation activities at the enterprise by 13.77%, which will promote investment and innovation activities as a whole. The calculations confirm the practical significance for the formation of the TCP for the development of investment and innovation activities of industrial enterprises. The main directions of further research, in which it is advisable to use the results, are to build economic and mathematical models for optimizing investment sources for the implementation of the TCP for the development of investment and innovation activities of enterprises.

Література

1. Гончаров П. В. Развитие механизма управления инновационно-инвестиционной деятельностью промышленных предприятий / П. В. Гончаров, Н. А. Лытнева. — Орел : ООО ПФ «Картуш», 2015. — 219 с.
2. Кадол Л. В. Особливості комплексної оцінки ефективності інноваційної діяльності підприємства / Л. В. Кадол // Глобальні та національні проблеми економіки. — 2016. — № 10. — С. 359—363.
3. Лапаев Д. Н. Инструменты управления инновационной деятельностью промышленных предприятий региона / Д. Н. Лапаев, Ю. М. Максимов, Е. С. Митяков, С. Н. Митяков. — Москва : РАНХиГС, 2013. — 228 с.
4. Позняк С. В. Інновації як фактор підвищення конкурентоспроможності підприємств [Електронний ресурс] / С. В. Позняк // Ефективна економіка — 2015. — № 10. — Режим доступу : http://www.economy.nayka.com.ua/pdf/10_2015/94.pdf.
5. Hackbarth D. Optimal priority structure, capital structure, and investment / D. Hackbarth, D. Mauer // Review of Financial Studies. — 2012. — Vol. 25. — Is. 3. — P. 747—796.
6. Ілляшенко С. Інноваційний розвиток: маркетинг і менеджмент знань : монографія / С. І. Ілляшенко. — Харків, 2016. — 192 с.
7. Kalay F. The impact of strategic innovation management practices on firm innovation performance / F. Kalay, G. Lynn // Research Journal of Business & Management. — 2014. — № 2 (3). — P. 412—429.
8. Schroeder H. Strategic Innovation for Business Performance: The Art and Science of Transformation / H. Schroeder // Technology Innovation Management Review. — 2013. — № 9. — P. 6—12.
9. Vertakova Y. Innovative and industrial development: specifics of interrelation / Y. Vertakova, V. Plotnikov // Economic Annals-XXI. — 2016. — Vol. 156. — Is. 1—2. — P. 37—40.
10. Riepina I. M. Cost effectiveness and attracting investments in crop sector / I. M. Riepina, M. Yu. Kuzhel, O. M. Halytskyi, D. V. Lisovenko, A. V. Fedchenko // Financial and credit activity: problems of theory and practice. — 2020. — Vol. 1. — № 32. — P. 168—175.
11. Cherep A. V. Development of special principles of business innovation activities' mechanism / A. V. Cherep, O. H. Cherep, R. Andriukaitienė, S. O. Korinnyi // Financial and credit activity: problems of theory and practice. — 2019. — Vol. 3. — № 30. — P. 206—214.

12. Doshi H. Uncertainty, Capital Investment, and Risk Management / H. Doshi, P. Kumar, V. Yerramilli // Working Paper. — Houston : University of Houston, 2015.
13. Азарова А. О. Комплексна цільова програма удосконалення інноваційного процесу з використанням сучасних автоматизованих засобів / А. О. Азарова, А. В. Сторожа, О. О. Мороз // Вісник Сумського державного університету. — 2013. — № 4. — С. 102—109.
14. Білоног Т. В. Методологія розробки комплексних інвестиційних програм [Електронний ресурс] / Т. В. Білоног // Збірник наукових праць Таврійського агротехнічного університету. Економічні науки. — 2012. — Режим доступу : http://archive.nbuv.gov.ua/portal/socgum/znptdau/2012_2_5/18-5-03.pdf.
15. Голубков Е. П. Проблемы планирования и управления: опыт исследований / Е. П. Голубков, О. М. Жандаров. — Москва : Экономика, 1987. — 206 с.
16. Про затвердження Програми розвитку інвестиційної та інноваційної діяльності в Україні : Постанова Кабінету Міністрів України від 02.02.2011 № 389 [Електронний ресурс]. — Режим доступу : <http://zakon5.rada.gov.ua/laws/show/389-2011-%D0%BF>.
17. Українець А. І. Способи впровадження цільових комплексних програм як інструмент модернізації машинобудівних підприємств / А. І. Українець // Глобальні та національні проблеми економіки. — 2015. — № 3. — С. 434—438.
Статтю рекомендовано до друку 05.06.2020 © Ястремська О. М., Строкочич Г. В., Ястремська О. О., Аміт Кумар

References

1. Goncharov, P. V., & Lytneva, N. A. (2015). *Razvitie mekhanizma upravleniya innovacionno-investicionnoj deyatel'nost'yu promyshlennykh predpriyatij* [Development of a mechanism for managing innovation and investment activity of industrial enterprises]. Orel: OOO PF «Kartush» [in Russian].
2. Kadol, L. V. (2016). Osoblyvosti kompleksnoi otsinky efektyvnosti innovatsiinoi diialnosti pidpriemstva [Features of a comprehensive assessment of the effectiveness of innovation activities of the enterprise]. *Hlobalni ta natsionalni problemy ekonomiky — Global and national economic problems*, 10, 359—363 [in Ukrainian].
3. Lapaev, D. N., Maksimov, Yu. M., Mityakov, E. S., & Mityakov, S. N. (2013). *Instrumenty upravleniya innovacionnoj deyatel'nost'yu promyshlennykh predpriyatij regiona* [Instruments for managing innovative activities of industrial enterprises in the region]. Moscow: RANHiGS [in Russian].
4. Pozniak, S. V. (2015). Innovatsii yak faktor pidvyshchennia konkurentospromozhnosti pidpriemstv [Innovations as a factor in increasing the competitiveness of enterprises]. *Efektivna ekonomika — Effective economy*, 10. Retrieved from http://www.economy.nayka.com.ua/pdf/10_2015/94.pdf [in Ukrainian].
5. Hackbarth, D., & Mauer, D. (2012). Optimal priority structure, capital structure, and investment. *Review of Financial Studies*, Vol. 25, 3, 747—796.
6. Illiashenko, S. (2016). *Innovatsiinyi rozvytok: marketynh i menedzhment znan* [Innovative development: marketing and management of knowledge]. Kharkiv [in Ukrainian].
7. Kalay, F., & Lynn, G. (2014). The impact of strategic innovation management practices on firm innovation performance. *Research Journal of Business & Management*, 2 (3), 412—429.
8. Schroeder, H. (2013). Strategic Innovation for Business Performance: The Art and Science of Transformation. *Technology Innovation Management Review*, 9, 6—12.
9. Vertakova, Y., & Plotnikov, V. (2016). Innovative and industrial development: specifics of interrelation. *Economic Annals-XXI*, Vol. 156, 1—2, 37—40.
10. Riepina, I. M., Kuzhel, M. Yu., Halytskyi, O. M., Lisovenko, D. V., & Fedchenko, A. V. (2020). Cost effectiveness and attracting investments in crop sector. *Financial and credit activity: problems of theory and practice*, Vol. 1, 32, 168—175.
11. Cherep, A. V., Cherep, O. H., Andriukaitienė, R., & Korinnyi, S. O. (2019). Development of special principles of business innovation activities' mechanism. *Financial and credit activity: problems of theory and practice*, Vol. 3, 30, 206—214.
12. Doshi, H., Kumar P., & Yerramilli, V. (2015). Uncertainty, Capital Investment, and Risk Management. *Working Paper*. Houston: University of Houston.
13. Azarova, A. O., Storozha, A. V., & Moroz, O. O. (2013). Kompleksna tsilova prohrama udoskonalennia innovatsiinoho protsesu z vykorystanniam suchasnykh avtomatyzovanykh zasobiv [Complex target program for improving the innovation process using modern automated tools]. *Visnyk Sumskoho derzhavnoho universytetu — Visnyk of Sumy State University*, 4, 102—109 [in Ukrainian].
14. Bilonoh, T. V. (2012). Metodolohiia rozrobky kompleksnykh investytsiinykh prohram [Methodology of development of complex investment programs]. *Zbirnyk naukovykh prats Tavriiskoho ahrotekhnichnoho universytetu. Ekonomichni nauky — Collection of scientific works of Tavriya Agrotechnical University. Economic sciences*. Retrieved from http://archive.nbuv.gov.ua/portal/socgum/znptdau/2012_2_5/18-5-03.pdf [in Ukrainian].
15. Golubkov, E. P., & Zhandarov, O. M. (1987). *Problemy planirovaniya i upravleniya: opyt issledovaniy* [Problems of planning and management: research experience]. Moscow: Ekonomika [in Russian].
16. Kabinet Ministriv Ukrainy. (2011). Pro zatverdzhennia Prohramy rozvytku investytsiinoi ta innovatsiinoi diialnosti v Ukraini: Postanova vid 02.02.2011 № 389 [On approval of the Program for the development of investment and innovation activities in Ukraine: Resolution of 02.02.2011 № 389]. Retrieved from <http://zakon5.rada.gov.ua/laws/show/389-2011-%D0%BF> [in Ukrainian].
17. Ukrainets, A. I. (2015). Sposoby vprovadzhennia tsilovykh kompleksnykh prohram yak instrument modernizatsii mashynobudivnykh pidpriemstv [Methods of implementation of target complex programs as a tool for modernization of machine-building enterprises]. *Hlobalni ta natsionalni problemy ekonomiky — Global and national economic problems*, 3, 434—438 [in Ukrainian].

The article is recommended for printing 05.06.2020

© Iastremska O., Strokovych H., Iastremska O., Amit Kumar