Module № 1 "Fundamentals of Investment and Innovation Management".

Lecture 1. Theoretical and methodological principles of investment management.

1. 1. The main functions of investing; essence and functions of investment management.

1.2. Investment analysis.

1.3. Investment strategy of the enterprise.

1.1. The main functions of investing; essence and functions of investment management.

Investment management (English management - management) - a set of methods, techniques, methods and principles of managing the investment process, the movement of investment resources in order to generate income in the future. The content of investment management is to organize a competent work with investments, aimed at maintaining and increasing the capital of the enterprise, its development in conditions of uncertainty and risk. Investment management covers the problems of capital management of the company, its assets, liquidity based on effective investments, investment planning systems, business projects, development of portfolio investment scenarios, risk minimization. Management activities related to the investment process can be carried out at the level of the state, territory, region, industry, enterprise. This determines the features of investment management at the state level and within individual economic entities. At the same time, management at all levels is based on a single methodological basis for assessing the effectiveness of the use of limited resources.

Investments in business facilities are made in various forms. For the purpose of accounting, analysis and planning, investments are classified according to various criteria:

There are real and financial investments by investment objects. Real investments are understood as investments in real assets: both tangible and intangible (innovative investments). Financial investments are understood as investments in various financial assets, among which the largest share is occupied by investments in securities.

According to the nature of participation in investing, there are direct and indirect investments. Direct investment means direct investment by an investor in investment objects. Indirect investments are investments mediated by other persons (investment or financial intermediaries).

According to the investment period, there are short-term and long-term investments. Short-term investments are usually understood as investments for a period not exceeding one year (for example, short-term deposits, purchase of short-term savings certificates, etc.). Long-term investments are understood as investments for a period of more than one year.

According to the forms of ownership of investors, there are private (joint-stock), public, foreign and joint investments. On a regional basis, there are domestic and foreign investments. Domestic investments are understood as investments in investment objects located within a given country. Investments abroad (foreign investments) are understood as investments in investment objects, for example, through the creation of assembly or production facilities abroad (direct investments).

Financial investments are assets received by an enterprise for the purpose of increasing profits (interest, dividends, etc.), increasing the value of capital or other benefits for the investor. Financial investments are understood as investments in various financial assets, among which the largest

share is occupied by investments in securities. Financial investment involves the acquisition of corporate rights, securities, derivatives and other financial instruments. Financial investments are divided into direct and indirect-portfolio.

Direct investment - direct investment by an investor in investment objects. Direct investment is carried out by trained investors who have sufficient information about the object of investment and know the mechanism of investment. Direct investments are usually made in the form of loans without investment intermediaries in order to acquire a controlling stake in the company. Direct investment involves the contribution of funds or property to the statutory fund of a legal entity in exchange for corporate rights issued by such legal entity.

Direct investment has a direct impact on the volume of capital investment in the economy. The purpose of direct investment is to establish control over the activities of the enterprise and to make a profit from its economic activities.

Direct financial investments allow the company to realize the strategic goals of its development in a fast and cheap way. Thus, in the sectoral or regional diversification of operating activities, increasing production and sales by "capturing" competing companies in its market segment and other similar cases, the company through appropriate forms of financial investment may acquire a controlling stake (controlling interest in the authorized capital) sub economic entities, the purchase amount of which is more than half of the market value of their business (50% plus one share (security)). Direct investment affects the level of employment and the state of the domestic market.

In developed countries, the criterion for classifying investments as direct is a 10% share in the statutory fund of the investment object. The investment can be considered direct and with a smaller share of participation, but it must provide a real impact on the economic activity of the investee. If the share of participation is more than 10%, but there is no real control over the object, the investment is not considered direct.

Indirect portfolio investments are investments mediated by other persons (investment or financial intermediaries). Not all investors have sufficient qualifications to effectively select and further manage investment objects. In this case, they buy securities issued by investment or other financial intermediaries (for example, investment certificates of investment funds or investment companies), and the latter place the thus collected investment funds at their own discretion in the most efficient investment objects, participate in their management , and the proceeds are distributed among their customers.

Portfolio investment involves the purchase of securities, derivatives and other financial assets with funds on the stock market (except for share repurchase transactions both directly by the taxpayer and related parties, in excess of 50% of the total amount of shares issued another legal entity related to direct investment.

Capital investment is the cost of construction and installation work, purchase of buildings or parts thereof, equipment, tools, inventory, other capital works and costs of design and survey work, exploration and drilling, as well as the cost of land allocation and resettlement in connection with construction, training for enterprises under construction, etc.

Types of financial investments

There are three main types of financial investments:

Own investments Own investments are the most unstable and profitable class of investments. The following are examples of property investments: Securities, stocks - literally certificates that say

you own a part of the company. Your expectations of profit are realized (or not) as the market evaluates the asset to which you own the rights. Demand for stocks raises the price, increasing profits if you decide to sell stocks. Business. Money raised to start and run a business is an investment. Entrepreneurship is one of the most difficult investments because it requires more than just money. Consequently, it is also an investment in property with extremely high potential returns. Real Estate - Houses, apartments or other residential buildings that you buy for rent, repair and resale. Precious objects. Gold, Da Vinci's paintings and signed by Jersey LeBron James can be considered an investment in property, provided that these are objects that are purchased for resale for profit. Precious metals and collectibles are not necessarily good investments for a number of reasons, but they can be classified as investments.

Investment in credit. Investing in a loan allows you to be a bank. They tend to have less risk than investing in property and are therefore reduced as a result. A bond issued by a company will pay a certain amount over a period of time, while during that period the company's fund may double or triple in value by paying far more than the bonds, or it may lose and go bankrupt. Your savings account. Even if you have nothing but a regular savings account, you can call yourself an investor. You are, in fact, giving money to the bank, which will be repaid in the form of loans. Bonds are a category for a wide range of investments from treasury and international debt to corporate unwanted bonds. Risks and returns differ significantly between different types of bonds,

Cash equivalents. This is an investment that is easy to convert into cash. Money market funds. With money market funds, profits are very small, 1% to 2%, and the risks are also small. Money market funds are also more liquid than other investments, meaning you can write checks on money market accounts in the same way as with a checking account.

Investment activity is a set of practical actions of citizens, legal entities and the state to implement investments (in property, financial or material form) in order to make a profit.

The investment activity of the enterprise is a consistent, purposeful activity, which consists in capitalization of property, in the formation and use of investment resources, regulation of investment processes and international movement of investment and investment goods, creating an appropriate investment climate and aims to make a profit or a certain social effect.

Investment activity is a type of economic activity, ie as a systematic action of organizational and property nature, aimed at investing on a long-term or permanent basis in order to determine the socio-economic effect, primarily - to make a profit.

The main purpose of investment activities is to provide the most effective ways to implement the investment strategy of the enterprise. The objective basis of investment activity are investment cycles. The investment cycle is a process that takes place during the time of investment. It is determined by the time between the formation of investment intentions until the commissioning of facilities on the project technical and economic indicators.

Typical stages of investment activity of enterprises:

formation of initial capital;

simple reproduction of the capital of the enterprise;

expanded reproduction of the capital of the enterprise;

attraction of foreign investments by the enterprise;

conducting foreign investment activities by the enterprise;

abbreviated playback;

the need for industrial re-equipment of the enterprise, significant foreign investment.

Objects of investment activity can be divided into the following groups: tangible assets, securities and property rights, intellectual property. Certain types of investment objects can be both objects in which funds are invested and forms in which investments are made.

Entities (investors and participants) of investment activities may be individuals and legal entities of Ukraine and foreign countries, as well as states.

Investors are subjects of investment activity who make decisions on investing their own, borrowed and attracted property and intellectual values in investment objects. Investors can act as depositors, creditors, buyers, as well as perform the functions of any participant in investment activities.

According to their status, investors can be corporate, institutional and individual.

Corporate investors are mainly joint-stock companies, as well as enterprises of other forms of ownership that have free cash.

Institutional investors are portfolio investors who form an investment portfolio based on a fundamental forecast of behavior in the long and medium term. These are usually professionals whose job is to trust assets.

Institutional investors are banks, mutual investment institutions (mutual and corporate investment funds), investment funds, mutual funds of investment companies, private pension funds, insurance companies, other financial institutions that conduct transactions with financial assets in the interests of third parties at their own expense or for account of these persons, and in cases provided by law - also at the expense of borrowed from other persons of financial assets in order to make a profit or maintain the real value of financial assets.

Individual (private) investors are individuals who use their savings to invest. An individual investor is often interested in the fact that free money brings income that will be a source of income when he reaches retirement age or provide financial stability to his family.

The rights of all investors, regardless of ownership, to place investments in any objects, are equal. Investment conditions may be different for domestic and foreign participants. It depends on the state policy on intensification of investment processes and directions of their state regulation.

Participants in investment activities are citizens and legal entities of Ukraine and other countries that ensure the implementation of investments as executors of orders or on behalf of the investor

Investment management is carried out on the basis of the following principles:

- integration with the general system of investment management;

- complexity and systematization in the formation of management decisions;

- dynamic management;

- variability of approaches to the development of some management decisions;

—Orientation and coherence with strategic development goals enterprises.

The essence of investment management is manifested in their performance

functions. Taking into account its complex content, there are two main ones

groups of functions: functions of the subject of management and special functions.

Functions of investment management as a subject of management. Their composition in general

characteristic of any management subsystem. They include

organization, analysis, planning, motivation, control.

The function of the organization involves structuring the object of management, delineation

rights and responsibilities of the relevant units.

The function of the analysis is to study the activity and efficiency of investment activities of the enterprise in order to identify reserves for their growth.

The planning function involves defining goals and choosing ways to achieve them

given the limited resources.

The function of motivation is an activity aimed at achieving goals.

It is used to trigger factors that affect people's behavior and take into account their needs.

The function of control is to timely determine the extent to which the actual processes in the investment activities of the enterprise deviate from the planned parameters, identify the causes of such deviations and prompt response to their detection.

Special functions of investment management. They characterize the specifics of investment management as a special type of management activity. These include the development of investment strategy, management of real investments, a portfolio of real investment projects, financial investments, securities portfolio, formation of investment resources, investment risks, return on investment, liquidity of investments.

The functions of investment management are implemented in certain areas.

The main ones are as follows:

- study of the external investment environment;

- forecasting the investment market situation;

- development of strategic directions of investment activity and strategy of formation of investment resources of the enterprise;

- search and evaluation of investment attractiveness of individual real investment projects, selection of the most effective of them;

- evaluation of investment qualities of financial instruments, selection of the most effective of them, formation of investment program (portfolio);

- current investment portfolio management and implementation of real investment projects and programs;

- development of proposals for restructuring investment portfolios (programs).

1.2. Investment analysis.

The basis of any enterprise is to obtain expected economic benefits and economic growth

potential through investment. Each investment decision is based on:

- assessment of one's own financial condition and expediency of participation in investment activities;

- assessment of investment and funding sources;

- estimation of future investment income.

Information base in the form of a project as a special. The investment analysis provides an investment plan or the results of the examination of the project to make a decision on the inclusion of the project in the investment portfolio, the beginning of its investment, continuous monitoring of implementation. It is part of the investment management process.

Investment analysis is a set of methodical and practical techniques and methods of development, justification and evaluation of the feasibility of investment in order to be approved by the investor

effective solution.

Methods and techniques of investment analysis are tools for thorough study of phenomena and processes in the investment sphere, as well as the formulation on this basis of conclusions and recommendations. The procedure and methods of such analysis are aimed at proposing alternative solutions to the problems of design and investment, identifying the extent of uncertainty in each of them and comparing them according to different criteria efficiency. Only a small part of the investment does not give the expected result for reasons beyond the investor's control. Most of the projects that became unprofitable could not be allowed to be implemented under the condition of qualitative investment analysis. Thus, investment analysis helps to improve the efficiency of investment management.

Investment analysis is a dynamic process in two planes - temporal and objective. In the time plane, work is performed that ensures the process of development of investment projects, from the origin of the idea to their completion.

In the subject area, the analysis and development of investment decisions in various substantive aspects. These aspects include the economic environment, well-defined investment goals and objectives, marketing, production, financial and organizational plans of the investor, the technical basis of the investment project, its social significance, environmental security, financial viability of the project, management organization

project, analysis of investment risk, sensitivity of the project to changes in some of the most significant factors, the adequacy of performance indicators, assessment of the capabilities of project participants, business qualities of its managers. These aspects should be developed during the preparation of the investment project, considered during its analysis, taken into account in making investment decisions, as well as monitored during the project until its completion or termination.

The subject of investment analysis is the causal links of economic processes and phenomena in investment activities, as well as its socio-economic efficiency. Their research allows to give a correct assessment of the achieved results, to identify reserves for improving production efficiency, to justify business plans and investment decisions.

The object of investment analysis is the financial and economic activities of enterprises in the context of the relationship with the technical, social and other conditions of investment activities.

Subjects of investment analysis are users of analytical information who are directly or indirectly interested in the results and achievements of investment activities of the enterprise. These include, first and foremost, owners, management, staff, suppliers, buyers, creditors, the state (represented by tax, statistical and other bodies that analyze information in terms of their interests for investment decisions). In particular, for owners interested in the stability and growth of dividends on invested capital, the priority areas of analysis are return on capital and financial stability of the enterprise, therefore the object of investment analysis for them is primarily the impact of investment projects on financial condition and financial results from their implementation. Suppliers and buyers perform investment analysis to determine the ability of the company to meet its contractual obligations from the standpoint of assessing the projected change in its financial condition due to investment activities. The object of investment analysis for creditors of the enterprise is the liquidity of its balance sheet, solvency and creditworthiness. The company's staff, taking into account the interest in increasing wages, other forms of incentives and social benefits, analyzes mainly the projected changes in financial results. The priority object of investment analysis for representatives of the state, in particular tax authorities, due to their interest in maximizing and timeliness of receipt of taxes and fees, are financial results.

The purpose of investment analysis is to determine the value of investments, ie the effect resulting from their implementation, which is generally the difference between the change in benefits

from investing in the implementation of certain investment projects, and changes in the total costs incurred within the projects.

The main functions of investment analysis are:

- development of an orderly data collection structure that would ensure effective coordination of measures for the implementation of investment projects;

- optimization of the decision-making process based on the analysis of alternatives, determining the order of implementation of measures and selection of optimal technologies for investment;

- clear definition of organizational, financial, technological, social and environmental problems that arise at different stages of investment projects;

- assistance in making competent decisions on the appropriateness of the use of investment resources.

1.3. Investment strategy of the enterprise.

The term "enterprise strategy" is understood as a system of organizational and economic measures to achieve long-term goals of the enterprise; substantiation of perspective landmarks of the enterprise activity on the basis of estimation of its potential possibilities and forecasting of development of external environment; the general direction of development of the enterprise, providing coordination of its purpose and possibilities and interests of all subjects; effective business concept of achieving competitive advantages by the enterprise; a set of promising landmarks for the enterprise; an action plan that sets out priorities for solving problems and resources to achieve the main goal. Under the investment policy of the enterprise understand the process of forming a system of long-term goals of investment activities and the choice of effective ways to achieve them based on forecasting the conditions of this activity, the investment market. The investment policy contains the following areas:

- risk management;

- program-target planning;

- preparation of capital budgets;

- strategic analysis;

- strategic management.

The most difficult is the problem of finding funds for sources of financing investment projects as a form of implementation of enterprise development strategy. The main sources of investment projects are own funds, borrowed funds, borrowed funds. Own funds are formed from previous savings (sale of land and other assets). Raised funds - from the sale of shares, loans from the budget. due to investment. Investment strategy is needed to implement a number of tasks:

- support of high rates of development of the organization thanks to investment support;

- obtaining the highest levels of return on direct and financial investments of the organization and all investment activities, taking into account the present investment risks;

- reducing the risk of investment risks in carrying out investment activities, without affecting the level of return on investment;

- support of investment assets at a sufficient level of liquidity, as well as collateral the fastest possible level of capital reinvestment;

- search and development of ways to promote modernization and improvement of investment

activity of the enterprise;

- support of the financial balance of the enterprise when making investments.

The process of developing an investment strategy includes the following stages:

1. Analysis of the current investment strategy, search for investment goals and compare them with the general objectives of enterprise development;

2. Study of the external investment environment.

The formation of the investment portfolio is a medium-term management process, which is carried out within the strategic decisions and current financial capabilities of the company. In turn, the process of tactical management receives its detailed disclosure at the stage of operational management of individual investment programs. Thus, the development of investment strategy is the first stage of the investment management process of the enterprise. Evaluation of the effectiveness of the developed investment strategy is based on the following criteria:

1) consistency of the investment strategy with the overall strategy of economic development of the enterprise;

2) the reliability of the strategy from the standpoint of its resource provision.

In the process of such assessment, the potential capabilities of the enterprise in the formation of financial resources from its own sources are considered. The qualification of the personnel and technical equipment of the enterprise, the possibility of involving the necessary financial, technological and energy resources in the implementation of the investment strategy are also assessed; 3) evaluation of the effectiveness of investment projects is based on determining the economic efficiency of their implementation.

Evaluation of the effectiveness of the developed investment strategy is based on the following criteria:

1) consistency of the investment strategy with the overall strategy of economic development

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2) the reliability of the strategy from the standpoint of its resource provision.

In the process of such assessment, the potential capabilities of the enterprise in the formation of financial resources from its own sources are considered. The qualification of the personnel and technical equipment of the enterprise, the possibility of involving the necessary financial, technological and energy resources in the implementation of the investment strategy are also assessed;

3) evaluation of the effectiveness of investment projects is based on the definition of economic

the effectiveness of their implementation.

Thus, the development of investment strategy allows you to make effective management decisions related to the development of the enterprise in the face of changes in external and internal factors.

Analysis of existing methods of evaluating investment activity will identify their shortcomings and ways to modernize them. Evaluation methods are important methods economic efficiency of investment activities, which are the basis for management decisions. Valuation methods belong to different groups: evaluation of investment projects, selection of optimal projects in the process of forming an investment portfolio, determining the contribution of expected investment activities in the financial results of the enterprise.

General principles of investment project evaluation:

- investment projects are considered for the full period of their existence;

- the evaluation should take into account the relationships of project participants and their economic environment;

- accounting for the impact of the project on possible changes in the future;

- choice of project in terms of their maximum effect;

- change in the value of funds taking into account the time factor;

- accounting for costs and results that are reflected in the project as future planned costs;

- providing conditions for comparison to compare different projects or their options;

- optimization of the project according to the pessimistic version of the conditions of its implementation;

- accounting for the impact of inflation on the price of resources during the life of the project;

- accounting for the impact of risks associated with the implementation of projects.

It is advisable to evaluate the effectiveness of investment projects in three stages:

1. Assessment of the scale and significance of the project, which is determined by the amount of investment attracted by the enterprise, the volume of production, market share.

2. Evaluation of performance indicators of the investment project.

Evaluation criteria are the basis for investment decisions. The most famous methods

evaluation of investment projects: static and dynamic. Static methods contain indicators that reflect the effectiveness of the project at the moment. These are the following indicators: return on investment; payback period of investments. Static methods do not take into account the specifics of project evaluation over time.

Dynamic estimation methods take into account the influence of time factors. These are the following indicators: coefficient return on investment, net discounted income, internal rate of return of the project, discounted payback period.

3. Assessment of the sensitivity of the main integrated indicators of the project, which characterizes the impact negative factors for the project: inflation, sales, product prices, the amount of funding required, interest rates on loans, the value of fixed and variable costs.

An innovation and investment strategy is not only a strategy that allows you to generate additional profits, but also a way to create, maintain and develop competitive advantages in attractive markets. However, the innovation and investment strategy is always associated with the risk of total or partial loss of investment to achieve the goals. Therefore, the main task that always faces the management of the organization - is to ensure maximum risk reduction when deciding to embark on the path of innovation and investment development.

Lecture 2. The essence and main theoretical aspects of innovation management.

2.1.The essence, purpose of innovation management.

2.2. The main goals of innovation management.

2.3.Areas of innovation management.

2.1.The essence, purpose of innovation management.

An innovative product is the result of an innovative project and research and (or) research and development of a new technology (including information) or products with the manufacture of a pilot sample or test batch and meets the following requirements:

a) it is the realization (implementation) of an intellectual property object (invention, utility model, industrial design, topography of an integrated circuit, selection achievement, etc.) for which the product manufacturer has state protection documents (patents, certificates) or received from the owners of these intellectual property licenses, or the implementation (implementation) of discoveries.

In this case, the used intellectual property must be decisive for this product;

b) product development increases the domestic scientific, technical and technological level;

c) in Ukraine this product is produced (will be produced) for the first time, or if not for the first time, then in comparison with other similar product presented on the market, it is competitive and has significantly higher technical and economic indicators.

2. The decision to classify a product as innovative is made by the central executive body that implements the state policy in the field of innovation, based on the results of the examination.

Innovation management with a relatively new concept and is an independent branch of management science and professional activities aimed at forming and providing conditions for enterprise development. The theory of innovation (innovation - a branch of science that studies the formation of innovations and their dissemination, as well as ways to develop innovative solutions) began to develop in the 20s of XX century and only about fifty years ago began to be thoroughly applied in practical organizations. There are different approaches to defining the essence and content of innovation management in the management literature. Some scholars believe that innovation management is a set of principles, methods and forms of management of the innovation process, innovation activities and staff engaged in these activities [2]. Other authors accept the fact that innovation management with one of the areas of strategic management and a number of problems of innovation managers are mainly related to new products. Innovation management can be defined as a system of economic development management in a more global sense, as management covers not only economic or technical problems, but also radical changes associated with basic innovations. Innovation management can be considered as a science and a type of activity. Given this, the most important issues are the nature of innovation, the innovation process and its management mechanisms. As an activity, innovation management is a process of making managerial decisions through a consistent set of procedures that form a general scheme of innovation management. Innovation management is associated with such key areas of the organization as scientific and technical, production, commercial activities. As a result, management decisions relate to:

- development and implementation of new products and technologies;

- modernization and improvement of products or certain technologies;

- further development of production (sales) with a simultaneous reduction of obsolete products.

At the level of a typical production and trade enterprise, innovation management is one of the areas of strategic management carried out at the highest level of the organization. Eyelashes form a set of rules, principles, norms, methods, values, organizational forms, relationships and economic relations. Similar to the traditional perception of general management, the management system of innovation processes in the enterprise consists of two subsystems: management (subject of management) and managed (object of management). The mechanism of management influence includes the collection, processing and transmission of necessary information and decision-making.

Innovation management should coordinate and coordinate the functioning and interaction of both internal and external structural elements of the innovation process, to create a certain coherence of work. The main goals of innovation management are to ensure long-term innovation development based on the effective organization of the constituent elements of the enterprise system and the creation of competitive products, the introduction of innovative technologies.

The main focus in innovation management is on developing a strategy for innovation activities. Development, production, sale of new products determine other areas of enterprise strategy. Therefore, the implementation of innovation management involves:

- development of innovation plans;

- monitoring and control over the development of new products and technologies for its implementation;

- implementation of a unified innovation policy, coordination of activities of all departments in this area;

- providing finances and material resources for innovation programs;

- provision of qualified personnel;

- creation of project groups to address innovation issues.

Innovative management of the enterprise is a special organizational and managerial activity aimed at obtaining high economic, social, environmental results through the introduction of innovations in production and commercial activities.

The set of activities is formed into general management functions: planning, organization, motivation, control. The composition of management functions and tasks can be regulated depending on the level of the managed system (economy in general, industry, organization, enterprise or individual innovation project) and internal and external conditions of its work. We believe that, since the term "management" is best used in relation to commercial entities, the subject of innovation management is the enterprise.

In turn, each general function is divided into specific types of work related to the multifaceted activities of the enterprise: planning the implementation of innovations, organizing the operation of new technological equipment, motivation for innovation and more.

Innovation management as a science studies the laws of development, economic, organizational, managerial, legal, socio-psychological factors influencing the processes of exploration, innovation, the most effective forms of organization of these processes in the enterprise.

World scientific thought is constantly working on progressive changes, so manufacturers have to adapt to new conditions in order to produce competitive products. However, in order for enterprises to follow the course of innovative development, appropriate external conditions are needed. The provisions of innovation management belong to the market economy, ie a prerequisite for the operation of innovation mechanisms is the presence of a market environment. Only in such an environment is the process of emergence and dissemination of cost-effective innovations possible. Unfortunately, the slow pace of reforms, uncertainty in the restructuring of the economy and other factors hinder the integration of Ukrainian business into transnational innovation processes.

Innovation management is a set of economic, motivational, organizational and legal means, methods and forms of innovation management of a particular object of management in order to obtain optimal economic or other results of this activity.

Thus, innovation management in general is a complex mechanism of action of the management system, which creates favorable conditions for innovation and opportunities for development and achieving effective results.

2.2. The main goals of innovation management.

Innovation (innovation, news) is a process aimed at the creation, production and development of new types of products, technologies, forms of labor organization, production and management or their qualitative improvement. Innovation activity can be considered as one of the forms of investment activity carried out in order to implement STP in the industrial or social sphere.

The form of manifestation of scientific and technological progress is the scientific and technological revolution, which reflects the radical changes in the development of productive forces on the basis of knowledge and use of the laws of nature and society.

The terms "innovation" and "change" are not identical. Change is any change in the status quo, while innovation is a more specialized type of change. Innovation is a new idea concerning the improvement or use of a new process, product or service.

All innovations mean changes, but not all changes are innovations, as changes may not bring new ideas or significant improvements.

The process of innovation contains a characteristic combination of properties (features). On the one hand, innovation contains considerable uncertainty, as it is difficult to predict how successful the outcome will be. On the other hand, this process requires comprehensive knowledge in the sense that it is necessary to have the latest information on the situation, at least at the development stage. We must remember that innovations are particularly vulnerable due to staff turnover and the transfer of workers to another job. The process of innovation is also often controversial, as resources focused solely on innovation can obviously be used for alternative activities. The process of innovation often goes beyond the organization, because often there is the development and implementation of more than one element in an increasingly complex environment. So,

The purpose of innovation management - to increase the profits of the organization through the continuous development of STP, the introduction of innovations, reforms (changes) in the organization.

The difficult task of innovation management is to manage sources of innovation opportunities.

There are reactive and strategic innovations.

Reactive innovations - innovations that ensure the survival of the enterprise, as a reaction to new transformations carried out by the competitor to be able to fight in the market.

Strategic innovations are innovations, the implementation of which is preventive in order to obtain decisive advantages in the future.

Innovation is an integral part of the functioning of the market mechanism, as it is the basis for effective business development, a means of competition, a factor in the formation of consumer demand and value of a product or service. In modern economic conditions, the key problems of their implementation are outdated material and technical base of research institutions, lack of effective mechanism for innovation transfer and unexplored state of innovation of agricultural enterprises, which does not allow to comprehensively assess its effectiveness. In turn, this leads to a decrease in the competitiveness of domestic producers.

For Ukraine, the rationale for a long-term strategy for innovative development is associated with significant problems that need to be addressed. Some scholars insist on the need to implement a strategy of technological breakthrough in the economy to ensure economic growth based on competitive advantage, the mechanism of market competition, entrepreneurial initiative and government support for innovation.

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2.3.Areas of innovation management.

In Ukraine, there are many obstacles to the implementation of the innovation process in enterprises. The most common among them:

1. Non-compliance of the organizational structure with the main requirements of innovative development.

2. Insufficient financial resources for the development of research and the possibility of using innovative developments.

3. Poor regulation of the regulatory system and imperfect stimulation of innovation.

Three types of strategies of innovative development have been developed in the world practice:

- transfer strategy (use of foreign scientific and technical potential and transfer of its achievements to its own economy);

- borrowing strategy (mastering the production of high-tech products already produced in other countries);

- building strategy (use of own scientific and technical potential).

At the current stage of development of Ukraine's economy, many commercial enterprises are faced with issues of increasing their own competitiveness and effective use of their own competitive potential. One of the areas of solving these issues is the development of innovation policy of the enterprise, which is part of the overall strategy of enterprise development and its implementation in practice. The decision to move an industrial enterprise to an innovative path of development can be made for several reasons, which can be divided into two main groups:

- the real urgent need for innovation is to increase the efficiency of the enterprise (ensuring the survival of the enterprise in the market);

- decisions of management in response to the actions of competitors or achieving compliance with the general level of development of trade.

That is, given the need to save all kinds of resources and the specifics of the industry, it is important to understand that innovation at some point in time is not appropriate and necessary for every commercial enterprise. If such a need is obvious, it is very important for the company's management to determine the desired desired depth of change. Determining the need for innovation and the depth of change is proposed in three main areas:

1. It is determined whether the company is satisfied with the dynamics of its economic results and the state of financial resources.

2. The competitiveness of the enterprise is determined by indicators of customer satisfaction, ie by the method of semantic positioning.

3. The company's management determines which competitive position in the market it is planned to take: to maintain the existing or change to another.

There are three areas of innovation, which take into account financial performance, resource availability, consumer needs and management's view on the future desired development of the enterprise and its competitiveness in the market. To choose the right innovation, consider each of them separately.

Basic innovations are innovations that shape a new industry. They are usually created on the basis of scientific discovery, ie radical changes in existing activities, or the creation of a fundamentally new direction of activity.

Improving innovation is a solution that represents a significant change or improvement in basic innovations. That is, they are related to the improvement of existing products or the introduction of new or improved methods of organization of production. Such innovations are best suited for industrial enterprises because such changes affect the improvement of technology and improve the quality and competitiveness of products.

Modification innovations involve minor changes in the existing product range, technology or management system to improve them. They do not change the functions of products or production processes, but lead to improved business.

Pseudo-innovations are solutions that represent minor changes in basic innovations. They do not carry significant novelty. The next step to determine the need for innovation is to assess the innovation potential of the enterprise, which includes:

- assessment of the company's readiness to implement innovations;

- allocation of a specific area of application of innovations in the enterprise.

Innovative development path is essentially focused on increasing revenues, in contrast to extensive and intensive development options focused on increasing production and reducing costs, respectively. In addition, the orientation of the subject of economic (entrepreneurial) activity on innovative development allows him to adapt to changes in environmental conditions and stay on the market for a long time.

Innovation management involves the following tasks (works):

- development and implementation of a unified innovation policy;

- development of projects and programs of innovation;

- preparation and consideration of projects to create new pylon products;

- control over the progress of work on the creation of new products and their implementation;

- financial and material support of innovation projects;

- training and education of staff for innovation;

- formation of target teams, groups, implement decisions of innovative projects.

These tasks also include: cost analysis, prices, taking into account the volume of production and sales of a new product to obtain the target profit; assessment of the effectiveness of the innovation project and its attractiveness to investors, ways to attract investment; identification of possible technical and commercial risks, their minimization, methods of insurance; determination of an effective marketing strategy, the choice of organizational form of creation, development and marketing of a new product; evaluation of ideas for the creation of new products, management of personnel involved in the development and production of new products, creating a favorable climate and corporate culture.

From the set of tasks solved by innovation management, we can formulate its main task - to achieve profitability (benefits) from the implementation of innovation activities.

The efficiency of functioning and development of business structures in modern economic conditions is impossible without the formation of an economically sound strategy of innovative development. However, the crisis in the economy constantly inhibits the innovative development of the enterprise, leaving most of the creative solutions at the ideological stage, making it

impossible to put them into practice. Under such conditions, the creation of an effective management system for innovation processes at all stages of enterprise development becomes important. The formation of such a system requires a comprehensive study of the prospects of scientific and technical development of the enterprise, development and implementation of such projects, which are based on innovations and have an innovative nature.

Decision making is one of the main tools of development and implementation of an effective concept of innovation management. Management decision is a conscious choice of an alternative among many possible ones, the implementation of which leads to the realization of specific innovation goals. Today there are quite a number of modern scientific disciplines that study the problem of decision making. These include mathematical programming, game theory, statistical decision theory, optimal theory automatic control. Along with them appeared a number of the latest applied disciplines, the name of which was not yet known forty years ago. These are operations research, systems analysis, and economic cybernetics. All these disciplines study the same problem - the scientific analysis of possible ways of action in order to determine the most effective of them in modern conditions, ie to find the optimal solution for the object of management.

The decision must be considered as a product of managerial work, and its adoption as a process leading to the emergence of this product. Decisions in the field of innovation are a connecting component of innovation management, because it is manifested in almost all its substantive functions.

Lecture 3. Innovation activity as an object of innovation management.

3.1. Variety and components of innovation.

3.2. Innovation cycle: motivation and setting of innovation goals, basic scientific activity, stage of research and development, production, sales, consumption.

3.1. Variety and components of innovation.

Innovation is a process aimed at implementing the results of completed research and development or other scientific and technical achievements into a new or improved product sold on the market, a new or improved technological process used in practice, as well as related research and development. Innovative activity begins with the emergence of scientific and technical ideas and ends with the distribution of the product.

The essence of innovation is in its areas:

- management of processes of creation of new knowledge;

- managing the creative potential of those who create new knowledge;

- management of development and dissemination (diffusion) of innovations;

- management of social and psychological aspects of innovations.

Innovation as a system has the following properties: interconnection and interaction of all elements, integrity, consistency and synchronicity over time, consistency with the tasks and objectives of the organization, adaptability, flexibility to change the environment, autonomy of management structure, management functions, versatility, versatility .

Innovation process - purposeful activity to transform scientific knowledge into innovation and diffusion of the latter, ie a conscious sequential chain of events aimed at obtaining an innovator of a certain type of effect by meeting existing or new needs. This is not just a reproduction of innovations, but a conscious, planned activity for the effective implementation of knowledge.

The innovation process can be represented in different ways. In the broadest context, the initial stage of the innovation process can be considered the period of time from determining (awareness) of the need to implement innovation to create a working version of the innovation project. The middle stage lasts from the development of the final version of the feasibility study and business plan of the innovation project to its practical implementation by the company as an experimental model. The final stage is the implementation of the transfer of innovations and their further spread in the country's economy and abroad.

In the simplified version, the investment process consists of the following main stages:

- the emergence of the idea of innovation;

- justification of the need for innovative change;

- evaluation of the effectiveness of innovation;

- development and technical implementation of an innovative idea;

- implementation of innovation in the system;

- promotion of innovation in the market.

Organizational and material basis of the investment process with organizational and production, research and development structures aimed at the implementation of innovation activities.

Innovations can be implemented at the initiative of manufacturers or buyers. In modern conditions, large organizations in developed countries have developed stable mechanisms for managing innovation processes, reflecting the peculiarities of the integration of science and industry, the increasing focus of research and development on market needs. New tasks make changes in the system of relations both vertically between levels of management and horizontally between scientific and design and technological units. In highly developed countries since the 80s of the XX century, the development and implementation of innovations have become a continuous controlled process, when innovative ideas (in the long run production plans and programs) cover all areas of enterprise activity.

In the process of preparation and development of technical and product innovations at the enterprise embodies various activities, which involve all departments:

1. Research work is performed to the greatest extent at the first stage of generation, selection of ideas and marketing research. At the stage of technological preparation of production and development of serial production of new products, research work contributes to the improvement of technological processes, introduction of advanced equipment, technological equipment and means of control, increasing the level of mechanization and automation of works and more.

2. Design and technological work is performed at all stages of creation and development of new products, but they are most detailed at the stage of design and technological preparation of production.

3. Organizational and planning work - a set of interrelated processes of planning, organization, accounting and control at all stages and stages of preparation for production, which ensure the readiness of enterprises to create and manufacture new products. Vouchers are aimed at fuller compliance at all stages of preparation for the production of such principles as specialization, parallelism, continuity, proportionality, straightforward accuracy, automaticity and rhythm.

Organizational and planning work includes: development of long-term and operational schedules of preparation for the production of veil products in general, as well as its individual stages and stages; planning of marketing research of consumer needs, research on positioning of a new product, which will allow to determine a possible competitive strategy; organization of work to create a regulatory framework for different stages of production preparation; establishment of standard structures and functions of subdivisions of enterprises that create new products; operational management of production preparation; organization of work to ensure the readiness of enterprises and their departments to produce a new product, development of organizational projects that model the process of preparation for production - from research to the use of products by consumers,

4. Work of material and technical nature involves ensuring the material and technical readiness of enterprises to create and produce new products. At the level of an industrial enterprise, it is the provision of timely and complete deliveries of basic and auxiliary materials, equipment, spare parts, etc., necessary for the production of new products.

5. Works of economic nature - a set of interconnected processes that provide economic justification for the creation, production and operation of new products. They include: determining the economic feasibility of creating, manufacturing and operating a new product; calculation of marginal prices for new products; establishment of terms and sources of financing of works on creation and development of new products; implementation of a number of economic calculations related to the creation, development of serial production and operation of new products. At the level of industrial enterprises, the economic aspects of preparation of new products also include review of planning and economic information, standards, forms of documentation, the current system of planning, accounting and evaluation of units of the enterprise taking into account the specifics of new products;

6. Works of socio-psychological nature - a set of interconnected processes that ensure the socio-psychological readiness of enterprises to create and manufacture new products. They consist in explanatory work on necessity of creation and development of new products of a certain level of quality at the established terms, volumes of release and the minimum expenses; in informing the team about the need for professional, qualification and organizational changes during the creation and development of new products; in mobilization by the management of the enterprise of creative possibilities of the personnel on creation and release of products in the shortest possible time at the smallest expenses of live and tangible work.

The main types of innovations in the enterprise include product innovation, technological processes, personnel and management.

Product innovations can be considered in terms of:

- new use of an already known product;

- changes in the appearance of an already known product;

- fundamental change of an already known product (improvement of certain characteristics, improvement of quality, reduction of production costs due to the use of new materials or new technological means);

- the invention of a radically new product.

Therefore, each new product can be characterized by:

- availability of new technical solutions, their significance (scientific and technical aspect);

- impact on the market, ie market novelty (marketing aspect).

If the new product model is better than the existing technical and economic characteristics (due to the application of new scientific recommendations, inventions and technical solutions) and the cost of its development is small, and there is no market novelty in the product, its implementation is unlikely to ensure profit. At the same time, the market novelty of the product can be achieved without scientific and technical solutions - due to changes in appearance, size, shape.

Management should be market-oriented to improve technology. Technology (Greek teshpe - art, skill, ability, and logic - a set of techniques and means of obtaining, processing, processing of raw materials, materials or products, which are carried out in various fields). It is also a scientific discipline that develops and improves these methods and techniques.

The technology includes the technological process, technical control, instructions for the technical process, rules, requirements, maps, schedules and more.

From the point of view of innovation management, it is a question of technology of production, trade, adjustment of sources of supply, sale, calculation and the account, drawing up of documents, information maintenance, selection of the personnel, acceptance and realization of administrative decisions, etc.

Technology must be cost-effective and competitive. Managing technology would be much easier if costs could be ignored.

The basis of innovation policy in the production enterprises of various industries are product innovations. They are crucial in terms of the purpose of the enterprise - to meet certain needs of society. But it is necessary to take into account the connection with other types of innovation, because product innovations contribute to technological innovation, personnel and management. The latter, therefore, ensure the successful and efficient implementation of product innovations.

The most important indicators that characterize the efficiency of the technological process are:

- specific costs of raw materials, energy per unit of output;

- quality of finished products;

- quantity of finished products;

- intensity of the process;

- production costs;

- cost of production;

- productivity.

Typical mistakes of managers regarding the implementation of technology:

- Attempts to implement several innovations simultaneously. Failure to do so makes it difficult to identify and quickly eliminate its causes. At the same time, the future of innovation depends on the first tests.

- Comparison of the new technology with the current level of production, and not with the level that will be achieved after the introduction of innovations.

- The use of quantitative indicators to assess new technology aimed at improving the quality of production. Before starting the implementation, managers must develop a specification for the new technology, the criteria for its evaluation, create the necessary infrastructure (information, accounting, calculation methods).

In fact, it is necessary to start from the extent to which the technology will meet the requirements of consumers. For example, it is impossible to achieve the desired success in the market if you offer too expensive a sports car when there is a need in the market for cheap small models for a small family.

New technology can be introduced by economically and technologically efficient enterprise. At a high rate of STP, it changes equipment, technology, brings new products to market.

The choice of a particular technology is made using a system of assessments based on qualitative professional analysis of intermediate and final results. The main purpose of the evaluation is to identify the need for changes in resource provision, management practices, organization of project implementation. The conclusions of the people who make this assessment affect the following aspects:

- amount of funding;

- scientific content;

- balance between different activities (directions);

- implementation plans.

The continuation, change or cessation of technological innovations, as well as the formation of new ones, depend on these assessments. Stages of implementation and evaluation criteria are inextricably linked. At the first stage, it is decided whether the company can afford to implement a new technology, assessing the technical advantages and compliance of the innovation with the specialization of production.

The assessment is carried out by technical experts and managers. There is a natural phenomenon: the more innovations correspond to the direction of production activities of the enterprise, the less strict the assessment of its technical advantages. Conversely, in order to dig management into the feasibility of a project that is not sufficiently consistent with the previous specialization, it is necessary to find stronger arguments to prove the benefits of the project.

The evaluation system may include internal and external examinations. Internal involves the formation of an evaluation committee of employees. This is an economic, but very subjective composition of experts. Involving an independent external commission completely solves this problem.

In the second stage, managers decide whether they should implement a particular technology. To do this, calculate the payback period of investments and other indicators.

With this formalized method of evaluation, various forms of rating are used, usually according to the financial criteria "cost - result". In addition, it provides an assessment of non-financial indicators: compliance with specialization, completion date of the implementation program, market size, growth rate of demand, competitiveness, etc.

Each company chooses its own evaluation methodology according to selected criteria.

3.2. Innovation cycle: motivation and setting of innovation goals, basic scientific activity, stage of research and development, production, sales, consumption.

The complexity of the innovation system stems from the definition that innovation combines science, technology, economics, entrepreneurship and management.

Dynamics is the need to study innovation only from the standpoint of the theory of life cycles, stages of their development. We can recognize two types of life cycles of innovation: "cycles of creation" and "cycles of implementation" of innovations, which differ significantly in their structure.

An innovation process is a consistent chain of actions in which innovation matures from an idea to a specific product, technology, structure or service and is embodied in economic practice and community service.

The basis of the innovation process is the process of creating and mastering new technologies. This process usually requires basic research aimed at gaining new knowledge about the development and laws of nature and society.

The model of the innovation process has a cyclical nature of "science - technology - production".

The process of implementing innovation is called the innovation process.

In order to distinguish two cycles - the internal intervals of the LC "product innovation" are called phases, and the stages of the LC "innovation process" - stages.

The innovation process can be defined as the process of transforming new scientific knowledge into innovation. In other words, the innovation process is a life cycle of innovation, ie a sequence of works from the whole cycle of innovation transformations (otherwise - the innovation cycle), and contains the stages of creation, development and industrial implementation of innovations.

Innovative processes that ensure the transition from one quality state of the object to another (higher), require resource costs, ie investment and time. For the effective implementation of innovation processes and in general the innovation activity of market economy entities, the presence of capital markets (investments), innovations, engineering and a developed innovation sphere is necessary.

For example, world experience shows that 90% of basic research has a negative result. And of the remaining 10%, not all have practical application. In addition, many discoveries occurred by accident, they were not foreseen by research plans. At the stage of introducing new technologies into production, this chain is also often broken. For example, of every 10,000 new products created in the U.S. economy in a year, 8,000 leave the market quickly, and of the remaining 2,000, only 100 provide their manufacturers with significant technical advantage and commercial success. For these reasons, it is impossible to be sure that by investing at any stage of the cycle, we will achieve a positive result in the next stage. Therefore, modern management of the innovation process is aimed at creating conditions for mass search.

Innovation - 1) investing in the economy, which provides a change of equipment and technology; 2) new equipment, technology that is the result of scientific and technological progress. A significant factor in innovation is the development of invention, rationalization, the emergence of great discoveries.

The innovation cycle is a complex multilevel process that lasts under certain conditions and for a certain period of time, during which the idea acquires a material embodiment [7] [8].

The cycle goes through the following stages:

Basic research;

Practical research;

Design developments;

Technological development;

Production;

Operation;

Modernization;

Utilization.

By its nature, the life cycle of innovation corresponds to the typical life cycle of the product and goes through stages of development, marketing, growth, maturity and decline, characterized by different ratios of costs associated with developing and bringing new products to market and sales revenue.

Each stage of the innovation life cycle covers several stages, which differ in the content of the work.

Development stage. Includes stages of fundamental and applied research, R & D (indicated in Fig. 2.3 - I, II, III) for transformation of the idea into a product suitable for industrial production,

development of its production technology.

Stage of market introduction and growth (Fig. 2.3 - IV). At this stage there are adjustments of the technological process, the release of a trial batch and its market approbation, formation of strategy and sales channels. On this stage profit is absent because costs exceed revenues from

sales. A period of rapid perception of a new product by the market and rapid profit growth.

Stabilization stage. It is characterized by a slowdown in sales due to the purchase of goods by most buyers. The product is no longer new. Profit stabilizes or decreases due to rising costs to protect it from competitors. This stage is vital the cycle of innovation is actually coming to an end. Recession stage. Sharp decline in sales and lower profits.

The goods are removed from production. The change of stages of the life cycle is due to certain patterns:

always the maximum growth of profit is reached at the stage of the beginning of production at the expense of a monopoly high price in the market. The price covers the losses associated with the development of a new product. After non-profit sales (low sales) the profit curve reaches up,

outpacing sales. Saturation of the market leads to a decrease in profitability, but due to large sales profitability remains high. In the maturity phase, competition increases sharply, as there is a diffusion (spread) of innovation, demand falls, the phase of decline begins, profits fall sharply to zero, after which products are removed from the sales stage. As a rule, such stages of the life cycle are technically complex innovation, the creation of which requires preliminary studies of the effectiveness of the technical solution taken as its basis, design development of the prototype, its testing, improvement, development of manufacturing technology and more. This process can be lengthy and optional

end in success. Experts attribute the high failure rate to the fact that innovations are common

arise on the basis of new knowledge, not new needs. In order to clarify consumer inquiries and requirements and prevent erroneous decisions when developing a new product, large companies create special units for the exchange of information with consumers, on the basis of which they plan their further research and development. In modern conditions, the success of innovation is determined by the ability to obtain information from a particular market segment on relevant needs and expectations, which are the starting point for the creation of an innovation.

The life cycle of innovation depends on the internal factors that determine the ability of the firm-innovator to diagnose relevant needs, form on their basis a congruent image of the future product and accelerate the process of transforming this image into materialized product, suitable for commercial implementation, and external, which are formed by the ratio of supply and demand and affect the duration of commercial use of innovation. D. Stark expresses the following idea: “instead of simply reacting to situations that arise from the outside from time to time, why not encourage such organizational forms that would again and again developed situations of uncertainty within the organization itself? Organizations that can adapt to such forms will strike the right balance to meet the challenge of continuous innovation. ”

The program of innovation policy basically provides planning of new production. Product planning - systematic decision-making in all aspects of the development and management of the company's products, including the creation of brands and packaging. If this plan is well structured, it allows the firm to pinpoint its potential; develop appropriate marketing programs; coordinate the set of goods; how to support successful, re-evaluate unsuccessful and eliminate unwanted goods.

Innovation activity (innovation process) is a process of creation, implementation and dissemination of innovations. The innovation process is cyclical and consists of many innovation cycles. The innovation cycle in the general case begins with the beginning of work on innovation and ends with its commercialization (launch).

The life cycle of a product innovation is the duration of the period of existence of a new product from its initial form (origin of the idea) to the complete rejection of the market from this product. The stages of the life cycle in the implementation of product innovation fully reflect the typical market reaction to a new product, and the duration of each stage depends on the product itself and the corresponding market response.

The life cycle of process innovation is determined by operations (procedures), the development of which should take into account the following points. First, the operation is implemented in the form of a completed document, which describes the entire procedure for this operation - the technological process, technological map, regulations for the creation of a new department, job description for a new position. Secondly, operations can be implemented in two directions:

- for internal use within the enterprise-developer of this operation;

- on the market, by selling the transaction to other economic entities.

At the same time, the purpose of the operation within the enterprise is to obtain economic benefits in the form of reducing the time for the whole complex of works, saving money, etc., the purpose of selling the operation on the market is to make a profit.

At the stage of development of a new operation and its documentation, work is carried out on the initiation and development of the entire algorithm of the operation, technological schemes of the operation are developed. The stage of realization of the operation is connected with its implementation at the enterprise, if the operation is intended for internal use, or with its realization on the market, if the operation is intended for sale. In the case of commercial purpose of the operation, it is at this stage it is advisable to carry out marketing promotion of innovation. The stage of market stabilization characterizes the degree of market saturation of the operation, at the end of which the transition to the stage of market decline, when sales of the operation begins to decline sharply until the complete cessation of sales.

Innovative development can be carried out in two directions: the improvement of basic and the creation of fundamentally new technologies. With the modernization of technologies, their transition to the stage of maturity and saturation of the market with this product, further development within the existing organizational and technological conditions becomes economically unprofitable, falling sales and profits. Thus, fundamentally new solutions emerge. The life cycles of products, processes and systems are of the same nature: any life cycle begins at birth, goes through stages of growth, maturity, aging and decline.

Stages of the innovation process at the macro and micro levels.

The innovation process in the organization is carried out in several stages:

1) generating ideas on ways to meet new societal needs;

2) development of the plan and its preliminary evaluation

market attractiveness;

3) analysis of the institutional conditions for the implementation of the plan and associated costs,

their comparison with the financial capabilities of the organization;

4) design and technological development of a new product;

5) trial marketing, demand forecasting and estimating the future

benefits);

6) planning and organization of the process of production of new goods;

7) commercial implementation of the novelty.

The model of the innovation process in a single organization is somewhat different from the general one. It covers six stages.

1. Identifying the need for innovation (identification and analysis of the problem, awareness of the need for innovation, the belief of members of the organization in the need for innovation).

2. Gathering information about possible innovations that will provide a solution to the problem (search for information on ways to solve such problems, identify options for innovative solutions).

1. Evaluation of innovative projects according to the criteria of feasibility and economic feasibility (development of innovative projects, evaluation of forecast results of each project, selection of innovative projects).

2. Making a decision on the implementation of innovation (decision on the feasibility of implementing the selected innovation project, decision-making by senior management).

3. Introduction of innovation (trial implementation; full implementation;

using).

4. Institutionalization of innovation (routine, modification, diffusion).

4. Methodical recommendations for implementation and design (short recommendations for implementation (solving practical (laboratory) tasks);

different types of practical tasks according to the specialty (tasks, tasks,

samples of tests, exercises, etc.))

Life cycle of innovations

The concept of the product life cycle was first proposed in 1965 by the American marketing theorist Theodore Levitt.

Its essence is that each new product goes through a certain life cycle, during which there are changes between the volume of its sales and the amount of profit. According to the concept, any product lives on the market only for a limited time, the duration of which depends on its purpose and specific quality characteristics. The life cycle of innovation is usually

develops traditionally. In some cases, innovation is so successful that its life cycle lasts a long time. This is a boom in product or long-term enthusiasm. However, the novelty may be unsuccessful: the consumer, first interested, soon loses interest in it. It may happen that the sudden interest in the novelty, due to successful advertising, will turn it into a product that everyone will love. But after a while the fashion for it passes, and the life cycle ends. Interest in the product may also be seasonal, ie demand increases in a particular season. Often innovations exist in numerous modifications. Improving the basic idea, the best design solution help to extend the life cycle of innovation, restore demand for it.

Thus, the life cycle of an innovation is the period of its stay within the firm of the innovator or several firms that create the innovation, and outside it, when the innovation is used by others.

With great potential, innovation, as a rule, spreads outside the enterprise through diffusion (Latin diffusio - spread). This is especially true for technological innovation. The spread of innovation in various sectors of the economy is reflected in the logistics curve, which is called S-shaped. It simulates the process of transition from one relatively stable state of the industry to another, the process of radical change that accompanies the innovation activities of enterprises in the industry, and reflects the stages of the life cycle of innovation:

origin, diffusion and decline. technical advances to enhance productivity and effectiveness of the socio-economic system.

Innovation is an integral part of the functioning of the market mechanism, as it is the basis for effective business development, a means of competition, a factor in the formation of consumer demand and value of a product or service. In modern economic conditions, the key problems of

their implementation are outdated material and technical base of research institutions, lack of effective mechanism for innovation transfer and unexplored state of innovation of agricultural enterprises, which does not allow to comprehensively assess its effectiveness. In turn, this leads to a decrease in the competitiveness of domestic producers.

For Ukraine, the rationale for a long-term strategy for innovative development is associated with significant problems that need to be addressed. Some scholars insist on the need to implement a strategy of technological breakthrough in the economy to ensure economic growth based on competitive advantage, the mechanism of market competition, entrepreneurial initiative and government support for innovation.

Product innovations can be considered in terms of:

- new use of an already known product;

- changes in the appearance of an already known product;

- fundamental change of an already known product (improvement of certain characteristics, improvement of quality, reduction of production costs due to the use of new materials or new technological means);

- the invention of a radically new product.

Therefore, each new product can be characterized by:

- availability of new technical solutions, their significance (scientific and technical aspect);

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The technology includes the technological process, technical control, instructions for the technical process, rules, requirements, maps, schedules and more.

From the point of view of innovation management, it is a question of technology of production, trade, adjustment of sources of supply, sale, calculation and the account, drawing up of documents, information maintenance, selection of the personnel, acceptance and realization of administrative decisions, etc.

Technology must be cost-effective and competitive. Managing technology would be much easier if costs could be ignored.

The basis of innovation policy in the production enterprises of various industries are product innovations. They are crucial in terms of the purpose of the enterprise - to meet certain needs of society. But it is necessary to take into account the connection with other types of innovation,

because product innovations contribute to technological innovation, personnel and management. The latter, therefore, ensure the successful and efficient implementation of product innovations.

The essence of innovation is in its areas:

- management of processes of creation of new knowledge;

- managing the creative potential of those who create new knowledge;

- development management; and the spread (diffusion) of innovations;

- management of social and - логі .logical aspects of innovations. Innovation as a system has the following properties: the relationship and interaction of all elements, integrity, coherence and synchronicity in time, coherence with the tasks and objectives of the organization, adaptability, flexibility to

changes in the environment, the autonomy of the management structure, management functions, versatility and multifaceted, renewable.

Several types of models are used in innovation management:

1.Linear. Is one of the first (proposed in the middle of the XX century.) And is a linear sequence describingstep-by-step innovation process from idea formulation to product realization. Its shortcomings are the lack of accounting for market demand for innovation, and the focus is mainly on basic research, which does not correspond to the current stage of development of science and technology.

2.Nonlinear. According to this model, there is a constant interaction between all stages and institutions: the exchange of information flows, investments, human and material resources. In modern organizations there is no determinism of innovation, the functions of different institutions often intersect and complement each other.

3.Product. It is based on the product life cycle and is a description of a number of works, the end result of which is embodied in the form of a new or improved product introduced to the market.

4.Process. Among the subspecies are organizational and managerial and technological models of the innovation cycle.

In the general case, there are 5 major phases of the innovation life cycle:

1. Study of basic laws (basic research).

2. Search for practical solutions to problems (applied research).

3. Design process.

4. Development and production.

5. Consumption.

The main stages of the product innovation cycle include the following:

Development (marketing research, R&D, testing, design and technological and organizational preparation of production and other stages). This period is characterized by active investment.

Start of sales. At this stage, the product begins to make a profit (benefit). The most important factors are advertising policy, inflation.

Expansion of sales areas. Sales growth until the market is saturated.

Stabilization of sales. Demand in the market is still active, but it is already declining.

Reduction of sales. When expanding the range and reorienting the market, the last 2 stages may be absent.

To describe the innovation operation (technology) there are 4 stages:

development;

realization;

market stabilization;

reduction in sales (its natural decline).

The duration and number of stages, their impact on the development of the cycle is determined by the characteristics of a particular innovation.

Stages

At each stage, there are several stages that characterize a particular type of work. For the product model, the stages of the innovation cycle are:

Research and development work, marketing research (forecast of demand and commercial success). Investments in the latest types of work may be commensurate with those for research and development, as it depends on the end result.

Experimental production (making a sample of a new solution).

If necessary - completion, correction of primary ideas based on the results of the previous stage.

Mass production of new products.

Trademark registration.

Lecture 4. State support for innovation.

4.1.Innovation of development in the context of globalization. Problems of ensuring national competitiveness.

4.2. The main factors of competitiveness of the national economy.

4.3. Model of innovation in the economy.

4.4. State registration of innovations

4.5. State registration of technologies.

4.6. Legal regulation of technology parks.

4.1.Innovation of development in the context of globalization. Problems of ensuring national competitiveness.

The main goal of the state innovation policy is to create socio-economic, organizational and legal conditions for effective reproduction, development and use of scientific and technical potential

of the country, ensuring the introduction of modern environmentally friendly, safe, energy and resource-saving technologies, production and sale of new competitive products.

The main principles of the state innovation policy are:

orientation on the innovative way of development of the economy of Ukraine;

determination of state priorities of innovative development;

formation of regulatory framework in the field of innovation;

creating conditions for the preservation, development and use of domestic scientific, technical and innovative potential;

ensuring the interaction of science, education, production, financial and credit sphere in the development of innovation;

effective use of market mechanisms to promote innovation, support for entrepreneurship in research and production;

implementation of measures to support international scientific and technological cooperation, technology transfer, protection of domestic products in the domestic market and its promotion on the foreign market;

financial support, implementation of favorable credit, tax and customs policies in the field of innovation;

promoting the development of innovation infrastructure;

information support of subjects of innovation activity;

training in the field of innovation.

State regulation of innovation is carried out by:

identification and support of priority areas of innovation;

formation and implementation of state, sectoral, regional and local innovation programs;

creation of regulatory framework and economic mechanisms to support and stimulate innovation;

protection of the rights and interests of the subjects of innovation activity;

financial support for the implementation of innovative projects;

stimulating commercial banks and other financial institutions that lend to the implementation of innovative projects;

establishment of preferential taxation of subjects of innovation activity;

supporting the functioning and development of modern innovation infrastructure.

Globalization can be represented as a set of processes that differ from each other in origin, areas of application, mechanisms and consequences that have different effects on the state of the world economic system.

Competitiveness analysis involves identifying the factors that provide benefits to certain market in relation to competitors. Competitive advantages are the basis of security competitiveness of

the enterprise, the essence of which is often in the economic literature due to the ability to stay ahead of competitors in achieving strategic goals.

Competitive advantages are divided into internal and external. External competitive advantages

are manifested in the benefits of meeting the needs and requirements of the enterprise (value for

consumer). Internal competitive advantages are expressed in managerial approaches to competition.

The experience of recent years has shown that not all domestic enterprises are capable of running efficiently competition. Even the presence of competitive products (services) does not allow

many of them realize these benefits due to the lack of practice of using everything set of measures.

The analysis showed that the main problems of formation of competitive advantages domestic enterprises are a one-sided approach to this process, the focus of management on solving current problems without forming an appropriate competitive strategy growth in the long run, the formation of competitive advantages with a low level of stability, is insufficient attention to finding reserves to increase competitiveness, etc.

In this situation, for each company it becomes necessary to analyze the competitiveness and development of effective means to increase it.

In general, we can identify some common features on the basis of which the grouping of factors

competitiveness of the enterprise: financial and economic condition of the enterprise; technical and organizational level of enterprise development; characteristics of the process of promotion and implementation products; staffing; human capital (or the level of investment in human capital);

intellectual capital (or the degree of use of intellectual capital of the enterprise).

Particularly important are the tasks related to reducing the cost of production, increasing it

quality, increase the profitability of the enterprise, as well as increase the efficiency of capital

costs. They stand in the way of Ukraine's European integration and in connection with the next ones

prospects for entering the European market. After all, it is known that all goods are imported on

the customs territory of the European Union, in addition to compulsory compliance with all its requirements, aimed at ensuring consumer protection, should also have an attractive price

characteristic.

Under modern business conditions in the process of ensuring the competitiveness of the enterprise

quality issues remain important. The main principle of successful formation and development

quality systems in the enterprise is the interest of senior management in the results and availability

responsible person for the development, implementation, operation and development of the management system processes of control and improvement of quality of products (services). In

the conditions of technological changes the system quality management is the basis of business strategies of the enterprise to ensure a stable competitive position in the market.

The main goal of the manufacturer is to maximize profits by meeting the needs consumer. This means that new products being developed must be more competitive

advantages over what already exists in the market. Thus, at the design stage, the manufacturer must

achieve the best possible technical characteristics of newly created products and the maximum reduce its cost. It is worth noting that it is the competitive advantages with a high degree of stability that provide the opportunity to maintain the achieved competitive positions for a long time and protect them for a long time. The degree of stability of competitive advantage is determined by the sources of its formation, the quality level and opportunities for content, continuous improvement and expansion through the production of innovative ideas. Sustainable competitive advantages that ensure long-term competitiveness of the enterprise should be based on knowledge and know-how, which will be embodied in innovative technologies, innovations and innovations, in the unique competencies of employees and so on. In modern economic conditions to increase the competitiveness of domestic enterprises it is necessary to take the following measures:

at the macro level:

- intensification of innovation and investment processes in the country;

- formation of a favorable business environment;

- application of cluster models of business development;

- assistance in attracting additional investments for modernization of production;

at the micro level:

- formation, continuous improvement and development of competitive advantages on an innovative basis;

- design and introduction to the market of modern high-tech products with the smallest costs;

- constant monitoring of changes and fluctuations in the competitive environment with identification

factors and factors influencing the level of competitive advantage;

- formation of an effective quality system;

- continuous training of workers and management of the enterprise;

- use of experience of leading domestic and foreign companies, etc.

Powers of the Verkhovna Rada of Ukraine, the Verkhovna Rada of the Autonomous Republic of Crimea and local self-government bodies in the field of innovation The Verkhovna Rada of Ukraine determines a single state policy in the field of innovation, namely:

creates a legal basis for the sphere of innovation activity;

identifies strategic priority areas of innovation;

within the State Budget of Ukraine determines the amount of allocations for financial support of innovation.

The Verkhovna Rada of the Autonomous Republic of Crimea, regional and district councils in accordance with their competence:

approve medium-term priority areas of innovation at the regional level and regional innovation programs financed from the budget of the Autonomous Republic of Crimea, regional and district budgets;

determine the budget of the Autonomous Republic of Crimea, regional and district budgets for financial support of regional innovation programs and instruct the Council of Ministers of the Autonomous Republic of Crimea, delegate powers to regional and district state administrations to finance regional innovation programs through state innovative financial institutions (within their regional offices) funds allocated in these budgets;

control the financing of regional innovation programs from the budget of the Autonomous Republic of Crimea, regional and district budgets.

Representative bodies of local self-government - village, settlement, city councils in accordance with their competence:

approve local innovation programs;

within the funds of the development budget determine the funds of local budgets for financial support of local innovation programs;

create communal innovative financial and credit institutions for financial support of local innovation programs at the expense of local budgets, approve their statutes or regulations on them, subordinate them to their executive bodies;

instruct their executive bodies to finance local innovation programs at the expense of the local budget through state innovative financial and credit institutions (their regional branches) or through municipal innovative financial and credit institutions;

approve the procedure for the formation and use of funds of communal innovative financial and credit institutions;

control the financing of local innovation programs at the expense of the local budget through state innovative financial and credit institutions (their regional branches);

control the activities of municipal innovative financial and credit institutions.

Powers of the Cabinet of Ministers of Ukraine in the field of innovation Cabinet of Ministers of Ukraine:

carries out public administration and ensures the implementation of state policy in the field of innovation;

prepares and submits to the Verkhovna Rada of Ukraine proposals on strategic priority areas of innovation and approves medium-term priority areas of innovation at the national and sectoral levels;

takes measures to implement priority areas of innovation;

promotes the creation of an effective infrastructure in the field of innovation;

creates specialized state innovative financial and credit institutions for financial support of innovative programs and projects, approves their statutes or regulations on them, subordinates these institutions to the central executive body that implements state policy in the field of innovation;

prepares and submits to the Verkhovna Rada of Ukraine as an integral part of the draft law on the State Budget of Ukraine for the relevant year proposals on the amount of budget funds for financial support of innovative projects through specialized state innovative financial institutions;

approves regulations on the procedure for state registration of innovative projects and maintenance of the State Register of innovative projects;

informs the Verkhovna Rada of Ukraine on the implementation of innovative projects that have been credited from the State Budget of Ukraine, and on the return to the budget of previously granted loans.

Powers of central executive bodies in the field of innovation Central executive body that ensures the formation of state policy in the field of innovation:

takes measures to conduct a unified scientific, technical and innovation policy;

coordinates work in the field of innovation activities of other central executive bodies;

submits to the Cabinet of Ministers of Ukraine proposals on strategic priority areas of innovation, medium-term priority areas of innovation at the national level, state innovation programs, as well as on the necessary amounts of budget funds for their lending;

submits to the Cabinet of Ministers of Ukraine proposals on the establishment of specialized state innovative financial and credit institutions for financial support of innovative programs and projects, develops statutes or regulations on these institutions;

provides regulatory and legal support in the field of innovation, ensures the development of innovation potential of Ukraine and the national innovation system;

exercises other powers provided by law and assigned to him by acts of the President of Ukraine in accordance with the law.

Central executive body that implements state policy in the field of scientific, technical and innovative activities:

prepares proposals for determining the priority areas of innovation development;

organizes forecasting and analytical studies of trends in innovation development;

carries out the state registration of innovative projects and maintains the State Register of innovative projects;

conducts competitive selection of innovative projects in accordance with the established procedure;

prepares proposals for draft innovation programs and determining the amount of state budget funds for their financing;

prepares proposals for the establishment of specialized state innovative financial and credit institutions for financial support of innovative programs and projects;

participates in the implementation of the state scientific and scientific-technical examination of innovative projects in the prescribed manner;

organizes advanced training of specialists in the field of innovation;

exercises other powers provided by law and assigned to him by acts of the President of Ukraine.

Other central executive bodies:

prepare proposals for the implementation of innovation policy in the relevant sector of the economy, create organizational and economic mechanisms to support its implementation;

prepare and submit in the prescribed manner in accordance with the competence of proposals for medium-term priority areas of innovation at the industry level;

instruct state innovative financial and credit institutions to conduct competitive selection of priority innovative projects implemented within the medium-term priority areas of the sectoral level, and provide financial support for these projects within the funds provided by the law on the State Budget of Ukraine for the year;

exercise other powers provided by law and assigned to him by acts of the President of Ukraine.

Powers of the Council of Ministers of the Autonomous Republic of Crimea, local state administrations, executive bodies of local self-government in the field of innovation

The Council of Ministers of the Autonomous Republic of Crimea, local state administrations (within the powers delegated to them by local self-government bodies) in accordance with their competence:

prepare and submit to the Verkhovna Rada of the Autonomous Republic of Crimea, the relevant councils proposals on medium-term priority areas of innovation at the regional level;

submit proposals to the specially authorized central body of executive power in the field of innovation activities regarding the inclusion of innovation projects under regional programs in state programs and their financing by lending from the state budget.

Executive bodies of local self-government in accordance with their competence:

develop projects of local innovation programs and submit them for approval to the relevant local councils;

take measures to implement local innovation programs;

involve enterprises, institutions and organizations located in the territory subordinated to them, with their consent, to solve problems of innovative development of settlements;

instruct state innovative financial and credit institutions (their regional branches) or municipal innovative financial and credit institutions to conduct a competitive selection of innovative projects of local innovation programs and provide financial support for these projects within the funds provided in the relevant local budget;

prepare and submit to the relevant local councils proposals for the establishment of municipal specialized innovative financial and credit institutions for financial support of local innovation programs;

submit proposals to the specially authorized central executive body in the field of innovation regarding the inclusion of innovation projects under local programs in state programs and their financing by lending from the state budget through state innovative financial institutions.

State control in the field of innovation

State control in the field of innovation is carried out to ensure compliance by all its subjects with the requirements of the legislation on innovation.

State control in the field of innovation is carried out:

a) the central body of executive power, which implements the unified state tax policy;

b) the Verkhovna Rada of the Autonomous Republic of Crimea, local self-government bodies within their powers;

c) in respect of the peculiarities of taxation determined by the articles of Section V of this Law - by the central body of executive power, which implements the unified state tax policy.

4.2. The main factors of competitiveness of the national economy.

Competitiveness is the main category of a market economy. The level of competitiveness determines the country's position in the global economic space, demonstrates its chances of surviving in harsh conditions hypercompetition. Unfortunately, after gaining independence, Ukraine has failed to significantly increase its level of competitiveness.

The key conditions for achieving a higher level of competitiveness of the country are:

- promoting the creation and acquisition of new knowledge as a defining basis for effective competition;

- development of internal competition that promotes innovation activity;

- creation of competitive advantages through the application of innovations, new technologies, knowledge and information;

- the ability of individual enterprises and industry as a whole to implement innovations, improve and modernize them;

- understanding that competitive advantages can be maintained only through continuous introduction of new and improvement of existing innovations, as any achievement is available for replication by competitors;

- creating a favorable environment to stimulate the development of advanced industries, the development of new industries and new enterprises.

In other words, the growth of the country's national competitiveness requires a constant focus of its economy on the search, implementation and implementation of innovations. Effective implementation of innovations allows to create significant strategic advantages in the most competitive industries. Leading companies achieve competitive advantage through innovation - through the use of both new technologies and methods of work, but after achieving the benefits of their maintenance becomes possible only through continuous improvement, ie continuous innovation. Thus, at the present stage of world economic development, the main feature of

competitiveness is its innovation, ie the ability of the system to systematic development, renewal and change in economic activity based on the assimilation of innovations.

Innovation is based on the process of improvement, progress, discovery of new, ie the effective assimilation and implementation of innovations aimed at updating technology, technology, organization of production and development of new products, and social innovations aimed at effectively changing staff behavior to obtaining the planned results. The combination of all components allows the system not only to survive in the face of intensifying competition, but also to achieve the required level of competitiveness.

The innovative way of development gives the world countries the right to provide themselves with technological advantages and actively form the core of the sixth technological system - information technology, biotechnology, nanotechnology, space technology, which determines the competitiveness of their economies in domestic and international markets.

4.3. Model of innovation in the economy.

The main reasons for the emergence and spread of innovation are the following: competition (the desire to gain a competitive advantage in the market and maximize profits); growing consumer demand; growth of technical potential; search for solutions to problems that arise in the business of the firm; the need not to lag behind in economic development, not to lose the market, to imitate other organizations that implement new technology; desire to improve their results in specific activities of the enterprise; support and ensuring the prestige of the enterprise; realization of knowledge and increase of prestige of the enterprise; intuitive idea that innovation can improve the company's activities; advice of consultants in any period of reorganization of the firm; scientific discoveries, internationalization of science; invention. It should also be noted that in world markets, national economies are characterized, as a rule, sectoral international specialization, which is why a necessary component of the competitiveness of the national economy are the achievements of the competitiveness of the industry. The loss of competitive positions by industries threatens the country's ability to maintain socio-economic optimality and stable economic growth. In addition, it should be borne in mind that the efficiency of the totality of enterprises in the industry shapes its competitiveness as a component of the competitiveness of the national economy. Therefore, it is quite natural that increasing the competitiveness of domestic producers has been declared the most important priority of Ukraine's policy. At the same time, the production of competitive products, which affects the creation of long-term competitive advantages, is directly related to the company's ability to maintain high rates of renewal and improvement of production through innovation, while non-innovative enterprises lose their competitiveness. One of the important and necessary components of the competitiveness of the national economy is to achieve competitiveness in its regions. In modern conditions, more and more attention is paid to the formation of the most favorable organizational and legal, socio-economic, political and other conditions to create opportunities for fuller realization of competitive advantages by regions. At the same time, among the conditions that directly affect the formation of the region's competitiveness, it should be noted the policy of local authorities in regulating regional business activities; infrastructure development; scientific and technical potential and the use of innovations in business. which directly affect the formation of the competitiveness of the region, it should be noted the policy of local authorities in regulating regional business; infrastructure development; scientific and technical potential and the use of innovations in business. which directly affect the formation of the competitiveness of the region, it should be

noted the policy of local authorities in regulating regional business; infrastructure development; scientific and technical potential and the use of innovations in business.

Regulation of innovation is carried out through the tax system, depreciation policy, financial assistance in the form of grants, subsidies, subventions for the development of individual regions, industries, industries: credit policy; through state norms and standards; antitrust measures; regulation of spheres and objects of investment of innovations; regulation of financial investments.

4.4. State registration of innovations .

innovations - newly created (applied) and (or) improved competitive technologies, products or services, as well as organizational and technical solutions of production, administrative, commercial or other nature, which significantly improve the structure and quality of production and (or) social sphere;

innovation activity - activity aimed at the use and commercialization of the results of research and development and determines the release on the market of new competitive goods and services;

innovative product - the result of research and (or) research and development that meets the requirements established by this Law;

innovative products - new competitive goods or services that meet the requirements established by this Law;

innovation project - a set of documents that defines the procedure and set of all necessary measures (including investment) for the creation and implementation of innovative products and (or) innovative products;

priority innovation project - an innovation project that belongs to one of the priority areas of innovation activity approved by the Verkhovna Rada of Ukraine;

innovation enterprise (innovation center, technopark, technopolis, innovation business incubator, etc.) - an enterprise (association of enterprises) that develops, produces and sells innovative products and (or) products or services, the amount of which in monetary terms exceeds 70 percent of its total output and (or) services;

innovation infrastructure - a set of enterprises, organizations, institutions, their associations, associations of any form of ownership that provide services to ensure innovation (financial, consulting, marketing, information and communication, legal, educational, etc.).

Legislation of Ukraine in the field of innovation is based on the Constitution of Ukraine and consists of laws of Ukraine "On Investment Activity", "On Scientific and Scientific-Technical Activity", "On Scientific and Scientific-Technical Expertise", "On Special Regime of Investment and Innovative Activity of Technological Activities" . parks "," On the special economic zone "Yavoriv", this Law and other legislative acts governing public relations in this area.

Innovative is a project that provides for the development, production and sale of innovative products and (or) innovative products that meet the requirements of Art. 14 and 15 of the Law of Ukraine "On Innovation". The state support for the implementation of an innovative project provided for by this Law is provided subject to its state registration. The state registration of an innovative project is carried out on the initiative of the subject of innovative activity in accordance with the provisions of Art. 13 of the Law of Ukraine "On Innovation".

State registration of innovative projects is carried out in the manner prescribed by the Cabinet of Ministers of Ukraine. The state registration of innovation projects is carried out, at the request of the subjects of innovation, by a specially authorized central executive body in the field of innovation. This body maintains the State Register of Innovation Projects. A necessary condition for entering a project in the State Register of Innovative Projects is its qualification. To qualify innovation projects, the specially authorized central executive body in the field of innovation activity determines a separate subdivision.

The institution may have regional offices in the Autonomous Republic of Crimea, oblasts, the cities of Kyiv and Sevastopol. The institution for the qualification of innovative projects organizes the examination of accepted projects. Expertise in the qualification of innovation projects is performed at the expense of innovation entities that apply for state registration, and in accordance with the Law of Ukraine "On Scientific and Scientific-Technical Expertise".

Projects that are recognized as innovative according to the results of the examination are entered by the specially authorized central executive body in the field of innovation activities in the State Register of Innovation Projects. Innovative projects in priority areas of innovation approved by the Verkhovna Rada of Ukraine are recognized by the Institution as priority innovative projects. Information on the entry of an innovation project in the State Register of Innovation Projects is published by a specially authorized central executive body in the field of innovation in its bulletin.

The specially authorized central body of executive power in the field of innovation activity issues to the subject of innovation activity the certificate of state registration of the innovation project. The form of the certificate is approved by the Cabinet of Ministers of Ukraine.

The certificate of state registration of an innovative project is valid for three years from the date of its issuance. After the expiration of this period, the state registration of the innovation project and the corresponding entry in the State Register of Innovation Projects shall be canceled. Information on this is published by a specially authorized central executive body in the field of innovation in its bulletin. The state registration of an innovation project does not provide for any obligations regarding budgetary crediting of its implementation or other state financial support. The term for consideration by the Institution of a project submitted for state registration as innovative shall not exceed six months from the date of its adoption. Peculiarities of examination and state registration of innovative projects, to which the provisions of the Law of Ukraine "On State Secrets" apply, are determined by a special Regulation.

In case of disagreement of the subject of innovation activity or any other natural or legal person with the decision on qualification of the innovation project and (or) with its state registration, these acts may be appealed to the court (commercial court). The institution is responsible for the completeness and accuracy of the examination and for the preservation of confidential information related to innovative projects.

Illegal qualification and state registration of a project as an innovative one entails liability in accordance with the law. Offenses in the qualification and state registration of innovative projects are: a) decision-making on the qualification of the innovative project and its state registration without examination; b) falsification of examination conclusions; c) committing actions that prevent the examination; d) intentional coercion or creation of circumstances for experts or expert commissions, which lead to biased examination; e) persecution of experts for their conclusions, which are unfavorable for a person or organization; f) involvement in the examination of officials and specialists directly interested in the results of the examination; g) disclosure of confidential information related to the innovative projects under consideration.

the organization for examination of innovative projects . expert organization, which has the right to conduct scientific and scientific-technical examination.

If the documents are not submitted in full, the Ministry of Education and Science of Ukraine returns them to the applicant within five working days of registration indicating the reason for return . Examination of the innovative project is carried out by an expert organization in accordance with the Law of Ukraine "And the procedure approved by the Ministry of Education and Science of Ukraine, at the expense of the applicant within the period specified in the contract for its conduct . The conclusion of the expert organization is valid for the period specified in the contract for examination.

4.5. State registration of technologies.

In accordance with paragraph 3 of the Procedure for registration of technologies and their components, created or purchased with budget funds or created or acquired by state-owned enterprises, approved by the Cabinet of Ministers of Ukraine dated July 3, 2013 № 472 (hereinafter - the Procedure), mandatory registration in one month from the date of completion of the relevant works (R & D) or signing of the agreement on technology transfer is subject to technologies that:

created or acquired (in part or in full) at the expense of the state budget (for the use of general and / or special funds of the state budget);

created or acquired by state-owned enterprises.

Other technologies may be registered at the request of their owners (in accordance with the fourth paragraph of paragraph 3 of this Procedure).

Registration of technologies, depending on the mode of access to the information they contain, has the following features:

I. Registration of technologies that do not contain classified or official information is carried out through an electronic technology registration system.

The procedure for registration of technologies through the electronic system is regulated by paragraphs 7 1-7 3 of the Procedure, as well as the Instruction on registration of the Technology Card and its components created or purchased (partially or fully) from budget funds created or purchased by state enterprises. subjects (owners) of technologies, approved by the order of the Ministry of Education and Science of November 9, 2015 № 1156, registered in the Ministry of Justice of Ukraine on 02.12.2015 for № 1501/27946.

Pursuant to paragraph 7 1 of the Procedure, in order to be able to register technology that does not contain classified or official information, the applicant (state enterprise that created or acquired technology, business entity that created or acquired technology at the expense of budget funds, or technology owner , specified in the fourth paragraph of paragraph 1 of this Procedure) determines the person authorized by him (if necessary, several authorized persons may be identified), who is responsible for filling out the Technology Registration Card, and notifies such person MES indicating his name, name, parent, position, contact phone number and email address.

The authorized person must register in the electronic system, which is available at the above link, and after successfully completing the authorization procedure will have access to the personal account of the electronic system user and will be able to fill in registration fields and send the completed draft Technology Registration Card to the MES. system user cabinet.

II. Registration of technologies that contain classified or official information is done by submitting to the MES a list of documents specified in paragraph 5 of the Procedure for registration of technologies and their components, created or acquired from the budget or created or acquired by state-owned enterprises).

Registration of technologies that contain classified or official information is carried out taking into account the features established by the Law of Ukraine "On State Secrets", other regulations in the field of protection of state secrets and regulations that determine the procedure for working with material media contain service information.

Completion of the registration form in the system of electronic registration of technologies and registration of the Technology Registration Card form and its components is carried out in accordance with paragraph 3 of the Instructions for registration of the Technology Registration Card and its components created or purchased enterprises, offered for registration by subjects (owners) of technologies, approved by the order of the Ministry of Education and Science of November 9, 2015 № 1156, registered in the Ministry of Justice of Ukraine on 02.12.2015 for № 1501/27946.

It should be noted that according to the order of the Ministry of Education and Science of Ukraine dated November 1, 2016 № 1297 "On amendments to the Procedure for state registration and accounting of open research, research and development works and dissertations" (registered in the Ministry of Justice of Ukraine on November 23, 2016 under №1521 / 29651) provides for mandatory registration of technology in the database "Technology of Ukraine" after the closure of R & D, if the registration and accounting documents of R & D in field 9153. Expected results "the code" 002 - technologies "is specified.

Documents for registration of technologies that contain classified or official information are accepted at the following address : office 22, 10 Peremohy Ave., Kyiv, 01135 Sector of Technical Protection of Information of the Department of Document Management, Control and Information Technologies of the Ministry of Education and Science.

4.6. Legal regulation of technology parks.

Technology and science parks are one of the main subjects of innovation activity in Ukraine. However, most often they qualify as subjects of innovation infrastructure, which is due to the direction of their activities to create conditions for the implementation of projects to implement new developments to other economic entities and scientific entities •. In Ukraine, the peculiarity of their legal status is associated with the simultaneous implementation of innovation and activities to promote and ensure the implementation of innovation projects, which determines their qualification as subjects of innovation and innovation infrastructure at the same time.

Technology Park (Technopark) - a legal entity or a group of legal entities operating in accordance with the agreement on joint activities without creating a legal entity and without pooling contributions in order to create organizational foundations for technology park projects for production of science-intensive developments, high technologies and industrial production of products competitive on the world market.

Participants of the technology park - legal entities - subjects of scientific, scientific-technical, business activities, concluded among themselves

The governing body of the technology park - a legal entity - one of the participants in the technology park, which on behalf of the technology park opens a special account of the technology park and which is responsible for the current management of the technology park, including The law of the order of special account funds

technology park, control over the use of special accounts of technology park participants, verification and preparation of proposals for changes or termination of technology park projects, preparation of reports on technology park activities, representation of interests of technology park participants in public authorities and local governments, concluding agreements on behalf of the technology park in accordance with the legislation, and other functions in accordance with the agreement.

Project - a set of documents prepared by the Technology Park, which includes a description of interrelated activities of the Technology Park, identifies its participants and joint ventures (executors of the project), co-executors and manufacturers for research, technical, technological, design , production of research batches and industrial production.

innovative products, as well as financial, personnel, marketing and commercial support for the production of new goods and services, which was held in the Cabinet of Ministers Ukraine is subject to examination and entered in the state register maintained by the central executive body that implements state policy in the field of scientific, technical and innovative activities. The nomenclature and volume of imports into Ukraine of materials, equipment, machinery, components and other goods necessary for the implementation of the technological park project, as well as the volumes of experimental, research and industrial production of innovative products are determined by the central executive body implementing state policy. technical and innovation activities, individually for each project.

Special regime of innovation activity - legal regime, which provides for the provision of state support to stimulate the activities of technology parks, their participants and joint ventures in the implementation of projects in priority areas of technology Parks.

Priority directions of activity of the technological park - economically and socially determined directions of scientific-technical and innovative activity of the technological park, which correspond to the scientific-technical and innovative priorities defined by the legislation and are aimed at industrial

production of competitive high-tech and innovative products and saturation of the domestic market and ensuring the export potential of the state.

Research Park - provides non-profit, fundamental and applied scientific transfer. Projects and developments have practical significance in the long run - more than 10 years. State support is decisive for the creation and development of the technopark

1 .Science and Technology Park - provides profitable / non-profit applied scientific and experimental transfer. The period from the stage of applied research and development to the stage of production of a new product lasts more than 5 years. A parity form of state support is used and business.

Industrial and technological park - carries out profitable activities, the essence of which is the temporary use of space, premises and equipment for the organization of technological production.

The idea of creating new forms of organization of the scientific process and commercialization of its results in the form of technology parks is usually attributed to the second half of the XX century,

when the industrial paradigm began to be influenced by high technology and information processes. The first example of a new approach was the science park, established at Stanford University in 1949 (California), which later became the leading technopolis "Silicon Valley". The successful experience of its operation has stimulated the emergence of similar or related entities around the world: first - in Western Europe and Japan, later - in Southeast Asia, and in recent years - in China and India.

In general, the technopark is a compact scientific and technical complex, which may include research institutions, universities and industrial enterprises, as well as information, exhibition complexes, service services and involves the creation of comfortable living conditions [1]. The creation and operation of the technology park is aimed at the maximum convergence of science and production, accelerating the transfer and implementation of research results in the field of material production for their commercialization. It is based on the development and promotion of knowledge-intensive technologies, the formation and support of new risky projects and enterprises that implement them. However, the most important thing is that close attention is paid to the concentration of all elements of the innovation process, and, above all, the creative potential of people [2]. Therefore, as a rule, the creation of technology parks uses a territorial approach - they are based on leading universities and unite in a certain area under their leadership various research institutions, enterprises, marketing, service, information centers to ensure rapid implementation of scientific developments as innovations. Such a special concentration of participants facilitates targeted support from the state, both direct - through budget funding, the introduction of tax benefits, etc., and indirect - by encouraging the participation of banks, corporations and other businesses. In addition, localization facilitates government agencies to monitor compliance with the subjects of such a zone of the established regime, prevents the use of benefits by firms that have links with the zones, but are not among their direct participants [3].

Despite the common goals and guiding principles of technology parks around the world, there has been no international unification of legal regulation of their activities and organizational forms - each country is characterized by national approaches to the conditions of creation and operation and organizational structure of technology parks. The Ukrainian practice of establishing technology parks has followed a path quite different from the general model.

For the first time the idea of creating technology parks in Ukraine was regulated in 1996 by the President of Ukraine "On the creation of technology parks and innovation structures of other types" [4], to supplement and specify which was approved and innovation structures of other types "[5]. However, the real introduction of the technopark model was received only in 1999 with the adoption of the Law of Ukraine "On special regime of innovation and investment activities of technology parks", which provided for the establishment of three technology parks "Semiconductor Technologies and Materials, Optoelectronics and Sensor Technology" (Kyiv), Institute EO Paton Electric Welding "(Kish) and" Institute of Single Crystals "(Kharkiv). The fate of this Law was not easy: after repeated amendments to the Law № 2505-IV of 25.03.2005 "On Amendments to the Law of Ukraine" On State Budget for 2005 "and some other legislative acts of Ukraine" special regime of innovation technoparks was actually liquidated and only on February 1, 2006 its action was resumed by the wording of the Law of Ukraine "On Special Regime of Innovative Activities of Technoparks".

According to item 1 of part 1 of Art. 1 of this Law, the technology park is defined as a legal entity or group of legal entities (participants in the technology park), operating in accordance with the agreement on joint activities without creating a legal entity and without pooling contributions to

create organizational bases for technology park projects. , high technology and industrial production of competitive products on the world market.

Thus, the legislation defines two organizational and legal forms of technology parks in Ukraine: 1) technology park in the form of an independent legal entity; 2) technopark in the form of a group of legal entities - participants who have concluded and act in accordance with the agreement on joint activities without creating a legal entity and without pooling contributions to implement the results of research and production of competitive products (paragraph 2 of Part 1 of Art. 1 of the Act).

The scope of technology parks includes conducting research, further development of their results to the state of innovative product through technical and technological, engineering design, creation of prototypes, development of test batches, as well as establishing a production process for their implementation and / or release of innovative products. In other words, they carry out not only scientific and scientific-technical activities, but also direct innovation activities, and on a systematic basis, which is aimed at commercializing the results of scientific research through their active implementation to more quickly generate revenue from it.

A special regime has been established for the implementation of technology park projects, the content of which has significantly narrowed compared to the preferential conditions for technology parks established in the first edition of the Law. Today, technology parks and their participants use targeted subsidies in the form of import duties accrued in accordance with the customs legislation of Ukraine, when importing new equipment, equipment and components, as well as materials not produced in Ukraine, but not transferred to the budget, and credited to special accounts of technology parks, their participants, opened in the territorial bodies of the State Treasury and use them exclusively for their intended purpose (Articles 7, 8). For the implementation of technology parks projects also set extended terms for settlements under export-import contracts - up to 150 calendar days, and funds received in foreign currency from sales of products (sales of goods, works, services) technology parks, their participants are not subject to sale (up to Article 11).

The Law also provides for the possibility of providing state support for the implementation of technology park projects. To this end, the State Budget of Ukraine should provide a budget program to support the activities of technology parks, funds for which are directed to: full or partial (up to 50%) interest-free lending (on inflation indexation) of technology park projects; full or partial compensation of interest paid by executors of technology park projects to commercial banks and other financial and credit institutions for lending to technology park projects (Article 6 of the Law). But the analysis of statistical indicators of technoparks taking into account the use of current forms and amounts of state aid shows that crucial in achieving positive results of technoparks are measures to provide indirect state aid in the form of customs benefits and indirect state support, despite its current legislation. not actually used in recent years.

A special regime is introduced for the technology park for a period of 15 years. However, this de facto regime does not apply to all activities of technology parks and their participants - it applies only to the conditions of a specific, registered project of the technology park. Thus, the special regime is not granted to the innovative activity of the technopark and the executors of its project as a whole, but only to the implementation of the relevant innovative project, which has passed the examination and received a certificate of state registration. Consideration, examination, state registration of technology park projects are carried out by the central executive body that implements state policy in the field of scientific, technical and innovative activities, at the request of the National Academy of Sciences of Ukraine.

The certificate of state registration of the technology park project in accordance with Part 6 of Art. 5 of the Law of Ukraine "On special regime of innovation activity of technology parks" is the basis for introduction of special regime of innovation activity and opening of special accounts of technology parks, their participants, instead of the certificate of state registration of technology park. The use of the conditions of the special regime in the implementation of innovative projects, as already mentioned, is limited to a 15-year period for the technology park. However, the certificate of registration of the technopark project, which is the basis for the introduction of a special regime, is valid for the duration of the technopark project, but not more than five years. So, in fact, we should not talk about a special mode of innovation of the technopark, but about a special mode of implementation of a particular innovation project of the latter.

In addition to the participants, other entities are involved in the implementation of innovative projects of technology parks: joint ventures, co-contractors and producers. According to item 5 of part 1 of Art. 1 of the Law of Ukraine "On Special Regime of Innovative Activity of Technology Parks" a joint venture is recognized as an enterprise created to implement technology park projects, one of the founders of which is the technology park or its participant, and the other - residents or nonresidents whose total contribution to the statutory fund at least $ 50,000. Despite the independent legal status of the technology park, the joint ventures are subject to a special regime of innovation, established for technology parks and their participants.

Based on the definition of the project of the technology park, enshrined in paragraph 6 of Part 1 of Art. 1 of the Law, there is a possibility of using in its implementation co-performers and producers of products for research, technical, technological, design, production of research batches and industrial production of innovative products, as well as financial, personnel, marketing and commercial implementation of new products and provision of services. However, unlike the previously mentioned participants in innovation projects of technology parks, co-performers and manufacturers do not use the conditions of the special regime of innovation activities of technology parks.

Thus, technology parks in Ukraine simultaneously perform the function of subjects of innovation and innovation infrastructure, creating opportunities for businesses to concentrate intellectual and financial resources for research and implementation of their practical implementation, which contributes to the use of special parks for technology parks. innovation activities.

In addition to technology parks, there are other subjects of innovation activity in Ukraine, which are also referred to as innovation infrastructure - we are talking about science parks. For the first time in Ukraine, the establishment of science parks was established by the Law of Ukraine "On Kyiv Polytechnic Science Park" [6]. In order to intensify the development, implementation, production of innovative products and innovative products in domestic and foreign markets [7].

The leading idea of establishing science parks is to create favorable conditions for the practical implementation of the institute's developments and their commercialization, as well as to increase interest in them from business entities and thus stimulate demand for them. The founders of science parks can be a higher educational institution of the IV level of accreditation, as well as a scientific institution and other legal entities that have concluded a founding agreement on the establishment of a science park. The Science Park has the rights of a legal entity and is created on the initiative of a higher education institution and / or research institution by combining the contributions of the founders for the organization, coordination, control of the development and implementation of science park projects. A certain higher education institution and / or a certain scientific institution may be the founders of one science park. The supreme governing body of the science park is the general meeting of founders, which forms its executive body.

The decision made by the founders to establish a science park is subject to coordination with the central executive body that implements state policy in the field of science and innovation, in the manner prescribed by the Cabinet of Ministers of Ukraine. At the same time, the list of priority activities of the science park is approved by the said central body of executive power. If the founders of the science park are state or municipal property entities operating on the basis of the right of economic management or the right of operational management, the decision on participation of such founders in the establishment of the science park is made in agreement with the relevant bodies. is state or municipal property assigned to such entities (Article 7).

According to Art. 14 of the Law of Ukraine "On Science Parks" science park projects are developed on a competitive basis within the priority areas of its activities and submitted to the executive body of the science park by legal entities and / or individuals in accordance with the terms of the competition proposals for priority areas. The results of the competition are the basis for the decision of the executive body of the science park to implement the project of the science park by a certain entity and the conclusion of a partnership agreement.

The executive body of the science park registers all science park projects for which a partnership agreement has been concluded, and science park projects, the implementation of which requires state support, are subject to state registration by the central executive body implementing state policy in the field of science and technology. activities. The maximum term of the science park project implementation may not exceed seven years from the date of its state registration.

As a result of the implementation of the science park projects, its partners submit reports to the executive body of the science park management in accordance with the terms of the partnership agreement. According to Part 4 of Art. 16 of the Law of Ukraine "On Science Parks" in case of non-compliance with the requirements of the science park project requirements, indicators and deadlines for its implementation, the executive body of the science park may decide to terminate the science park project in full or in part due to unilateral refusal about the partnership, which will be considered terminated or amended accordingly. The central executive body implementing state policy in the field of scientific and scientific-technical activities, upon a substantiated submission of the executive body of the science park in the manner prescribed by law, cancels the state registration of the science park project or makes appropriate changes to the state register of science park projects.

In order to intensify the creation and operation of science parks, the state uses a number of means of state regulation, in particular, the state order, the provision of state financial support, the establishment of preferential terms for the payment of import duties. Law of Ukraine "On Science Parks" in Art. 18 enshrines the right of science parks to give priority to the application for a state order for the supply of products, works and services to meet priority state needs. According to Art. 19 of the Law of Ukraine "On Science Parks" introduces a regime of exemption from import duties for the import of scientific, laboratory and research equipment, as well as components and materials not produced in Ukraine.

founders and partners of science parks, which manage or manage state property, may lease it for the implementation of science park projects. The funds received from the lease of such state property are directed to the lessor for the implementation of science park projects.

On the other hand, the state has set a number of restrictions on the activities of the science park, namely: trade and intermediary activities, provision of household services, production and processing of excisable goods and others that do not meet the purpose of the science park (Article 6). Property rights to technologies and objects of intellectual property rights created during the

implementation of science park projects are the property of the science park and / or its partners. But the property rights of the science park to use and dispose of technologies and objects of intellectual property rights, created with public funds, may be limited by the central executive body, which manages a higher education institution or research institution, in cases specified in h Article 4 17 of the Law. In this case, the science park and / or its partners have the right to use the technology and / or object of intellectual property rights, created with public funds, only for their own needs, unless otherwise determined by the central executive body in charge of higher educational institution or scientific institution.

Termination of the science park is carried out exclusively by its liquidation by the decision of the founders or on the basis of a court decision. Reorganization of the science park is prohibited.

Module 2 "Management of an enterprise as a subject of innovation."

Lecture 1. Organizational forms of innovation .

1.1. Types of organizational structures of innovation management at the enterprise.

1.2. Organizational structures for the implementation of innovations

1.3. Organizational forms of integration of science and production.

Market subjects of innovation activity

The main components of innovation are innovation, investment and innovation. Innovations form the market of innovations, investments for their implementation - the capital market, innovations - the market of pure competition of innovations. These three components together with the innovation infrastructure form the sphere of innovation activity.

Innovation market. The main product in this market is a scientific and scientific-technical result - a product of intellectual activity, which is subject to copyright, issued in accordance with applicable law. It is formed by scientific organizations, higher educational institutions, temporary creative teams, individual inventors, etc.

Market of pure competition of innovations. It is a product of various innovations (technical, economic, organizational, social, etc.), the implementation of which allows business entities to gain certain competitive advantages.

Investment market. The main product in this market is the free financial resources of various organizations, financial institutions, funds, etc., which can be attracted by business entities to implement innovations; their price, volumes and the period for which they can be provided significantly affect the innovation activity of enterprises. Innovation infrastructure. Provides organizational, legal and economic support for innovation at various levels and in various forms.

Innovation infrastructure - a set of enterprises, organizations, institutions, their associations, associations of any form of ownership that provide services to ensure innovation (consulting, marketing, information and communication, legal, educational, training, etc.). The components of the innovation infrastructure are financial institutions; zones of intensive scientific and technical development (technopolises); technology parks (technology parks, agricultural parks , innovation

parks); innovation centers (technological, regional, industry); incubators (innovative, technological, innovative business); consulting (consulting) firms, companies, etc. The formation of market relations in the field of innovation involves the existence of various organizational forms that differ in the scale of innovation and its content. Innovation is the basis of competitiveness, so every market entity is interested in creating and using innovations. Firms that are not able to create innovation on their own are involved in the innovation process at the stages of its diffusion. Therefore, according to the time of involvement in the innovation process and the approach to the choice of innovations, market participants are divided into four categories: experts , patients , switches and violent . Violets . They focus on innovations that reduce the cost of manufacturing products, while providing it with the level of quality required by the majority of consumers. Due to low prices and medium quality, the company is always competitive. Violent can be an expert firm at the stage of using an innovation that has received widespread recognition.

Patients . Create innovations for the needs of a narrow segment of the market, giving the product unique properties, so their products are usually exclusive, high quality and expensive. Such firms can be creators of innovations or their improvers, they avoid competition with large corporations, looking for inaccessible areas of activity. Commutators. Use innovations created by others (usually violets), enriching them with individual characteristics, adapting to the small needs of a particular client. They increase the consumer value of goods not due to ultra-high quality (as patients), but due to individualization. Increased flexibility of switches (for which they were called "gray mice ") allows them to maintain a competitive position. Usually switches are small firms that use innovations as they age.

Experts . These are companies that specialize in creating new or radically changed old market segments. They are developers of new products, for which they create powerful research departments and design offices. By introducing fundamentally new products, they make a super profit due to their high knowledge and due to the pioneering of their introduction to the market. Such firms are most at risk, but if successful, they get the most out of it. Assignment of firms to a certain category is conditional, because they sell more than one type of product, and the strategy for each of them may be different. In this case, the risk is eased throughout the firm. At some point, the expert firm becomes a violent or a patient . However, there are companies that are purely innovating, seeing this as a way to make a profit by bringing to market a product that is missing. For their propensity to take risks associated with radical innovation, such firms have been dubbed venture capital firms.

Venture firms (risk entrepreneurship) - mostly small enterprises in technologically advanced sectors of the economy, specializing in research, development, creation and implementation of innovations related to high risk.

The peculiarity of such firms is the focus on solving scientific problems and specific production tasks with a clearly defined end result. They are most common in knowledge-intensive sectors of the economy, specializing in research and engineering, ie commercial testing of scientific and technological innovations.

The development of venture business as an independent form of entrepreneurship dates back to the 1940s, and the variety of its forms appeared in the 1960s and 1980s in the United States. This was due to the urgent need to restructure the US economy during the mid-1970s crisis. Venture has emerged in new knowledge-intensive industries, primarily electronics as a technology industry in the missile business. In particular, with the help of venture capital, the American company " Arrle " was created.

The role of venture firms not only in improving the scientific and technical level of production, but also in their impact on the dynamism of the entire economic complex. They are generators of fundamentally new ideas, on the basis of which there are powerful scientific and technological changes. In addition, these companies contribute to the effective use of highly qualified specialists, the development of their creative potential.

To create a venture firm you need:

· Commercial idea (new product, technology or service);

· Public need for a specific innovation;

· An entrepreneur who is ready to create a venture firm on the basis of innovation;

· "Risk" capital to finance the activities of a venture firm.

Modern venture enterprises are flexible, mobile structures characterized by high purposeful activity. This is due to the personal interest of the company's employees and venture business partners in the accelerated successful commercial implementation of a particular idea, product or technology. Even large industrial enterprises cannot compete with them in terms of the pace of bringing development to commercial realization. It was small venture firms that gave rise to such inventions as electrography, vacuum lamps, ballpoint pens, jet engines, colored paper, and so on. Statistics claim that the life of more than 60% of important innovations of the XX century. gave venture firms. It is they who pass on their developments to experts , patients , commuters.

Market participants in innovation play a significant role in accelerating the country's economic growth, taking the first step towards the implementation of innovations, taking the main risk of their implementation. The task of the state is to support them in this endeavor, creating, in particular, various organizational structures to support innovative entrepreneurship.

1.2. Organizational structures for the implementation of innovations

Promising and effective implementation of new technologies and developments is the functioning of a network of innovation structures such as technology parks, technopolises, innovation business incubators, innovation and technology centers, small and medium innovation enterprises, and industrial and financial groups.

Small business plays a significant role in creating innovations and their practical application, which can be included in the innovation process at its various stages: from the creation of innovations (venture firms) to their use at the stage of extinction (switching firms). Flexibility, mobility of small firms provide high receptivity to innovation. However, due to the small scale of their activities, they are often unable to implement a promising business idea on their own, as they do not have the appropriate funds.

In order to support the development of business structures at the stage of their formation in many countries create business incubators.

Business incubator is an organizational structure, the purpose of which is to create favorable conditions for the initial development of small enterprises through the provision of a certain set of services and resources.

Business incubators as institutions for "growing" small businesses appeared in the late 50's of XX century. in the United States. The first was a project by a sociologist that America once laughed at. The idea didn't seem very serious: a sociologist rented an old station that nobody needed for nothing, divided it into small rooms, hired qualified lawyers and economists, and rented out offices

for small business start-ups very cheaply. The results exceeded expectations. If under normal conditions only 12 out of 100 start-up businessmen got back on their feet, in this business incubator almost 30% of them successfully switched from small to medium business, and a significant number successfully took over a certain market niche.

The success of the first business incubator attracted the attention of government agencies, and local governments in many US states began to support such initiatives. The business incubator was perceived as a school for businessmen, a kind of launching pad for business development in the region. Ensuring the permanent employment of its inhabitants depended on the number of small enterprises in the region.

Business incubators have become widespread in Europe. They are attractive to novice businessmen because many of them can produce interesting ideas, but only a few can implement them, as this requires experience and expertise. If there is a structure that takes on specific work on the legal or economic support of the business, then success can be achieved even by those who do not have special knowledge of organizing their own business.

The services of business incubators include:

· Rent of areas (office, production, conference halls);

· Technical and administrative services (mail, Internet, telephone, fax, photocopy, office secretary, etc.);

· Consulting (on business planning, legal, tax);

· Economic (services of an accountant, financier, economist, marketer, manager);

· Investment (search for investors, attracting loans, start-up financing of newly established companies);

· Scientific and technical (introduction of new technologies, know-how, new products);

· Educational (trainings, retraining courses, training in the program of general management and other economic disciplines necessary for doing business);

· Presentation (exhibitions, competitions, conferences);

· Information (creation of databases, transfer of new information technologies);

· Publishing (publishing booklets, brochures, leaflets, the latest methodological developments, etc.);

· Employment (job search, inclusion in the database of professions and vacancies, preparation of resumes, preparation for interviews with employers, etc.).

In the process of organizing a business incubator, it is important to create an existing network of organizations, institutions and businesses of various forms of ownership that can affect the economic development of the region. Mergers can be made in different ways: from equity participation in the establishment of a business incubator as a legal entity to participation in an advisory board or cooperation on a contractual basis.

The partners of business incubators are:

· Local authorities that can facilitate its organization, give it the status of a business incubator, provide the necessary support if certain obstacles arise;

· Associations of entrepreneurs of the region (unions, associations, foundations), which have authority in business circles, influence the formation of economic policy, determine priorities and prospects for development of the region;

· Banks and other credit institutions that can be a source of investment for start-ups through a business incubator;

· Scientific institutions and higher education institutions that can help attract new staff of entrepreneurs, highly qualified specialists - managers, financiers, economists, engineers, developers of know-how, technical and technological innovations, as well as basic institutions for training and retraining (training) of employees companies, to establish business contacts, exchange experiences, knowledge, find niches in markets, etc.

Increasing the number and activity of such business structures in the region solves many of its problems: increasing the number of jobs and employment, reducing local budget expenditures related to unemployment; local budget revenues increase, regional infrastructure develops, living standards increase, etc.

All over the world, business incubators are mostly non-profit organizations that exist at the expense of municipalities or sponsors. They can be self-sustaining by only 10-60%. Therefore, the state should provide real financial support to business incubators.

Thus, the contribution of organizational structures of small business in the development of innovation processes is significant. However, often their innovative product does not have a high degree of novelty, which is due to the lack of adequate material base for its creation. The development of business incubators and innovation centers increases their ability to implement entrepreneurial ideas, creates the necessary conditions for their successful formation. However, large-scale innovative projects cannot be implemented by small businesses. To do this, in the practice of innovation management use other organizational forms - regional science and technology centers, parks and technopolises.

1.3. Organizational forms of integration of science and production

Every city and region is always interested in expanding knowledge-intensive industries, stable rates of development of scientific and technical potential, job creation, formation of production and social infrastructure, support of active business activities and constant stimulation of science development. This can be ensured by the cooperation of research institutions with business structures, which is carried out with the support of the government.

Effective organizational forms of cooperation of industrial firms with higher educational institutions are scientific and technological centers, technology parks and technopolises. Experts attribute their development to significant achievements and technological explosions in recent years. The creation of such structures means a qualitatively new vision of the conditions for implementing and ensuring innovation processes and creating a favorable environment in which scientific ideas are transformed into unique competitive scientific and technical products, make another breakthrough in the field of new technologies.

In foreign practice, the concept of "science technology park" is used as a general definition of a powerful innovation structure. This group includes research centers and parks, science parks, innovation centers, centers of advanced technology, technology centers and parks, technology policies. All of them are the basis of specialized innovation associations created in the leading industrial regions of the world.

Regional Science and Technology Centers (RSTCs) are the means of forming and implementing regional innovation policy aimed at ensuring the economic development of the region.

For effective innovation policy it is necessary to form a system of monitoring the innovation potential of the region, create a regional system of support and development of innovation, coordinate the activities of organizations engaged in innovation, promote the intellectual and qualification potential of the region. All these issues are within the competence of the RSTC.

Technology parks are being set up by industrial companies near universities. They include research units of these companies and enterprises created by them, which attract university staff to work on the orders of companies. This allows researchers to apply the results of their research in practice.

Technopark (science and technology park) - a compact scientific and technical complex, which includes research institutions, universities, commercial firms, consulting, information and other services and which operates on the basis of commercialization of scientific and technical activities.

Technopolises are associations of science, innovation, science and technology parks and business incubators in a certain area in order to provide a powerful impetus to the economic development of the region.

They were founded and spread in Japan three decades ago. In 1982, the Japanese government published strict requirements for applicants (prefectures), compliance with which allowed them to create a technopolis ("city of technology"). Each technopolis had to consist of three main components: large enterprises with at least 2-3 advanced industries (production of optical fibers, integrated circuits, medical equipment, information systems, etc.); a powerful group of public or private universities, research institutes; residential area with modern buildings, a developed network of roads, sports, cultural, shopping centers. In addition, the technopolis should be located near a city with a population of at least 200,000 and with a large airport or railway junction, so that in one day you can go to Tokyo and back.

The main tasks of technopolises are the modernization of traditional industries in the region and bringing them to the modern level, the choice of scientific areas that determine the technopolis, which can provide advanced development of production infrastructure. However, the most important thing is to create the most favorable conditions for employees, professionals and residents of the area on the industrial base of which the technopolis is formed, ie the focus of the technopolis to meet people's needs, improve their living standards and economic prosperity.

Organizational structure of management - a system of optimal distribution of functional responsibilities, rights and responsibilities, the order and forms of interaction between the individual structural units that are part of it, and the people who work in them.

In the theory of innovation management there are two types of organizational structures: mechanistic and organic.

Mechanistic organizational structures. They are characterized by a rigid hierarchy of power, formalization of rules and procedures, centralized decision-making, objective selection criteria, and an objective remuneration system. They function as a well-coordinated mechanism and are extremely inert to any change. This type includes:

linear: consists of interdependent structural units, which are connected with the highest levels of government through the immediate supervisor, in a hierarchy; this makes the structure less flexible, inert;

functional: provides a clear hierarchy of structural units that ensure the implementation of each specific management function at all levels; this divides the management process into separate loosely related functions, inhibiting, in particular, innovation processes;

linear-functional: under the line manager there are groups of specialists united in departments on a functional basis, whose task is to develop recommendations in the relevant functional areas; this increases the validity of management decisions and the efficiency of their implementation, which is important for innovation processes;

divisional: the enterprise is divided into homogeneous sections, mostly by product or territorial characteristics; this allows us to focus on product development by introducing, in particular, improving innovations.

Organic organizational structures. They have blurred boundaries of governance, a small number of levels of government, are characterized by weak or moderate use of formal rules and procedures, decentralization of decision-making, ambitious responsibilities, informal interpersonal relationships. These include structures that are very flexible in interaction with the external environment:

matrix: is a combination of structuring the organization by function (vertical) and projects (horizontal), which provides coordination of actions for the implementation of several innovative projects;

design: are forms of implementation of innovative projects within mechanistic organizational structures;

network: built on the principle of organizational and economic separation of individual stages of the technological process, which increases the possibility of their optimal implementation through the involvement of participants who perform each stage of the process in the best way.

The modern system of innovation management at large and medium-sized enterprises involves the creation of:

special units, councils, committees, etc., their task is to identify key areas of innovation and make appropriate proposals to the board of directors;

central new product development services. Their function is to coordinate the innovation activities of all departments in order to take an integrated approach to creating new products;

target project groups or centers for new product development, project implementation. The author of the idea is appointed the leader of such a group. If successful, such a group can become a subsidiary;

design teams, laboratories, research centers that are part of production units;

venture divisions and special funds to stimulate innovation;

Innovation Advisory Group: researchers, leading specialists; advise the management of the company and representatives of departments;

special laboratories for the development of new technologies.

4.2. Central coordination services.

Under the organization of innovation we understand the process of streamlining the elements of the innovation system, which provides a rational combination in time and space of all elements of

the process of development and diffusion of innovations to effectively implement planned decisions to achieve objectives and strategic goals. The organization of innovation management involves the creation of a hierarchical organizational structure, which includes specialized departments, managers at various levels, who are empowered to make and implement certain management decisions and who are responsible for their results.

The success of innovation management depends on the organizational model of the enterprise as a whole and the units that are directly responsible for innovation. Since the most important problem is the recruitment of specialists and the establishment of the organizational form of work, it is necessary to choose the organizational structure of management. The organizational structure of management is a set of interconnected management units located at different levels.

The development of STP in the 80s of the XX century led to the separation of management innovation process into an independent type of management. As a result, flexible structures for end-to-end innovation management have emerged, using horizontal links between IIDC units, chief technologist services, production, and sales.

The innovation management system envisages the creation of central services for the coordination of innovation activities, the formation of target project groups or centers for innovation development, the organization of consulting assistance in the field of innovation. Central coordination services provide a comprehensive approach to such activities: develop a common scientific and technical policy, control and coordinate innovation activities carried out in different production units.

Specialized divisions - councils, committees for innovation policy development - are created mainly in large organizations that produce science-intensive products. The task of such units is to identify key areas of the innovation process and submit specific proposals to senior management for decision-making.

Coordination and innovation services are subdivisions that coordinate innovation activities within the organization as a whole, coordinate goals and directions of technical development, develop plans and programs of innovation activities, monitor the development of innovation and its implementation.

Program-target groups for research, development and production of new products and technologies are independent business units for the complex implementation of the innovation process from ideas to the production of a specific program. They are created at the middle level of management in the departments of marketing, IDKR, services of chief designer and technologist. Target groups, created on a temporary or permanent basis for a period of 1-5 years, contribute to the effective organization of creative search.

The program-target group can also be organized as follows. The design engineer (technologist), who is the author of the idea, heads the target group and is directly responsible for the development and implementation of a specific innovation. In this case, the principle of flexible end-to-end innovation management is implemented, which is based on decentralization of management.

Project-target groups have their own system of motivation for the development and implementation of innovations and are subordinated to the top management of the organization in the case of solving issues of innovation financing. Usually, small groups of 5 to 15 people are formed, and then they can be transformed into independent research and production units for the development of new areas of activity, combining all the main stages of the research and production process.

Development centers are a new form of organization of the innovation process, which involves the creation of independent units not related to the main activities of the organization. They are designed to develop innovations that reduce production costs, improve product quality, ensure the production of new products, stimulate sales and promote market gains. To stimulate! managers and staff of the center a special procedure is introduced. The salaries of employees and the remuneration of managers depend on the commercial results of the center, therefore, commercial risks and failures associated with the implementation of innovation do not cause penalties in the absence of erroneous management decisions.

Venture capital units are formed in large organizations on the basis of the creation of their own "venture capital" funds (see more question 3 of this topic).

Specialized centralized funds to stimulate innovation are created with the help of part of the profits of organizations and used to accelerate the introduction of innovation into production. Centralized funds fund research and development that is important to the activities of the entire organization.

Advisory or analytical groups consisting of researchers, managers and representatives of functional units are responsible for forecasting technology development and demand for new products, choosing promising ideas, determining research topics, coordinating the work of scientists, designers, technologists.

The degree of participation of various departments in the development of innovation is largely determined by the scope of the organization and the nature of the products. In consumer goods organizations, marketing professionals play a key role in assortment policy. In contrast, in companies specializing in the production of industrial products, a more important role in science and technology policy belongs to the design and technology departments.

The initiative to develop innovation, coming from marketing managers, is presented as a result of marketing research, which contains information about the needs and demands of the market, the technological needs and capabilities of the organization, competitive counterparts in the market. When ideas for innovation come from design and technology departments, they are presented as the result of focused research on promising products and technology.

In general, a large enterprise has a multi-level branched structure in which management can take place on one (or several at a time) of the following principles:

- functions (planning, design, control, etc.);

- territorial feature (management of offices located in different places);

- goals and objectives (to perform certain areas of the project or special types of work, performers of different specialties or functions are united and work together on a certain part of the project or task).

The organizational model depends on many factors, such as the nature of innovation, the scale of innovation, its industry affiliation, and so on.

The most common approach to the formation of units is functional, in which specialists of one specialty are combined into functional units. However, the functional structure in its pure form is not used, because the management is carried out by the line manager through a group of subordinate functional managers, each of which has the right to manage units within its authority. Its use provides a high potential for teamwork and motivation of professionals. Such an organizational structure provides competent management for each management function.

However, the efficiency of management may be slowed down due to the coordination of cross - functional decisions .

Functional organizational structure is used, as a rule, in those organizations where there is a stable level of demand for products, clear business conditions. The main disadvantages of this traditional organizational form in the implementation of innovations: inflexibility, inability to change the composition and responsibilities of staff. In an innovative company, the interaction at the level of "organization - environment" is based on an organic approach, which is characterized by the use of informal procedures, decentralization and participation of staff in the development of management decisions, flexibility, small levels of hierarchy. In such conditions, due to the lack of clearly defined standards, the specialist is guided by motivation, internal remuneration, and does not work under the supervision of formal control systems.

Interaction at the level of "unit - unit" is implemented through divisional, design and matrix structures. A characteristic feature of the divisional structure is the creation of functional management bodies within a relatively independent unit - department, branch, subsidiary, branch. The headquarters plans and allocates the main resources, and the units make operational decisions and are responsible for the final result and profit. The shortcomings of divisional structures (growth of management, conflicts between units over the distribution of financial and material resources) are overcome in organizations built differently.

The matrix structure corresponds to the program-target nature of the project activity (Fig. 4.1).

Temporary project teams headed by project managers are created for innovation activities. The presence of semi-autonomous groups, which are formed for a specific project, authorized to receive resources, determines the organization of labor, product quality, innovation, and sometimes even hiring.

Matrix structure

The matrix structure allows for flexible maneuvering of human resources due to their redistribution between projects, while maintaining administrative affiliation to the relevant functional departments. That is, the matrix principle of relationships is interrelated with the functional structure. Powers between the project manager and the functional manager are distributed as follows: the first determines the tasks, methods, solutions and deadlines, and the second - the composition of the group from its unit. The project manager is responsible for the final results of the project, including the cost, time and quality of execution. With this in mind, clear horizontal communications must be established. Under such conditions, the matrix structure is very flexible, fully focused on innovation, provides high efficiency, low development time and efficiency.

However, there are some drawbacks. First, the principle of effective management is violated - the unity of management. The executor in the matrix structure is subordinated to two managers: the direct head of the structural unit and the project manager. Second, functional units may be overloaded if the same employees are needed to carry out different projects. This problem can be solved through more effective strategic planning, prioritization and budgeting of financial resources. It is best to use the management of innovation processes based on a matrix organizational structure in enterprises where there is a wide range of products, which often need to be updated according to market demands.

The second type of structure for innovation is project management. It is somewhat similar to the matrix, because to solve a specific problem, a special working group is created, which may not last long. At the same time, the relevant staff returns to their units. To achieve the goals of

innovative development, a special unit is created that deals exclusively with strategy issues, and project managers focus on specific tasks.

In terms of management efficiency, project management is better than matrix management: subordination of each employee to only one manager, compliance with the rule of management, rational distribution of powers and responsibilities between levels of management, which contributes to clear division of labor, avoid duplication and more.

Today, in the field of high technology and dynamic industries there are organizations of the edhocratic type (Greek aiposgas - the power of knowledge, competence). In essence, this is a project type for complex and non-standard work, power is not based on formal hierarchical relations, but on knowledge and competence. Because the activity is creative, there is great freedom of action, the ability to solve problems is valued, the reward is collective, financial resources are distributed from above.

Thus, the most common types of organizational structures that implement innovative activities are considered to be matrix and project organizations. Before choosing a certain type of structure, it is necessary to determine the tasks of the organization for research units in the short and long term, the composition of specialists, it is necessary to establish fruitful cooperation between them. It should also be noted the need for properly organized communications as an important condition for sound innovation management to achieve goals and create favorable socio-psychological conditions. A modern requirement when creating communication networks is the use of the latest information technologies and professional computers with a single database.

Lecture 2. Management of innovative development of the organization.

2.1. Functions and role of innovation managers.

2.2. Analysis of innovative capabilities of the organization. The organization's receptivity to innovation.

2.1. Functions and role of innovation managers.

The priority tasks of Ukrainian managers responsible for innovation include:

- ensuring the viability of your company in conditions of internal and external competition;

- the ability to take risks within reasonable limits and the ability to reduce the impact of risky situations on the financial condition of the enterprise;

- development and consistent implementation of personnel development programs taking into account the social problems of their enterprise and society as a whole.

Specialists and managers who are entrusted with the function of managing innovation activities in the enterprise, can be called innovation managers. Management of innovation activities of a particular enterprise involves:

- analysis of the external environment taking into account uncertainty and risk;

- analysis of the innovative potential of the firm;

- development of innovative development goals;

- creation of a system of innovation strategies;

- search for innovative ideas, licenses, know-how;

- market situation forecast;

- formation of innovation and investment portfolios, project development;

- planning and organization of scientific developments, their implementation in production;

- improvement of organizational management structures;

- HR;

- assessment of the effectiveness of innovation;

- study of market conditions, innovation activities of competitors;

- market research for new products and technologies (roar capacity, conditions and elasticity of demand, etc.);

- forecasting the activities, nature and stages of the life cycle of new products (on this basis, decisions are made on the size of production capacity, investment);

- research of resources needed for innovation processes;

- analysis of risks of innovations, definition of methods of their minimization;

- development of options for cooperation in research with a competitor;

- the choice of organizational form of creation, development and placement of new products (monitoring of innovation projects, internal or external ventures);

- evaluation of the effectiveness of the investment project;

- study of the feasibility and planning of the most adequate form of technology transfer in the process of creation, development, placement on the market (licenses, transfers, scientific and technical cooperation).

Innovation managers include:

- leaders of creative groups of performers;

- heads of laboratories, departments and functional services, production units;

- managers of different levels who coordinate the activities of innovation units and external partners;

- leaders of innovative enterprises.

In general, the job responsibilities of the manager depend on the scope of the enterprise, the hierarchical level, the range of management. Top-level innovation managers are responsible for:

- creation and stimulation of innovative conditions at the enterprise;

- development of creative thinking, creative activity of innovation developers;

- creation of flexible organizational structures;

- preparation of selected market segments for the innovative product;

- ensuring the efficiency and cost-effectiveness of innovation processes;

- preparation of production and promotion of innovative product;

- organization of information exchange between relevant R&D units for closer contacts and mutual understanding during innovation development.

The specifics of innovation processes, which involve many participants and interested organizations and which are the object of management, determine the special nature of the work of managers in this area and outline the performance of certain roles and their requirements.

The main requirements for the professional competence of innovation managers are:

- knowledge of theory and practice in management, which requires managers to have special training in management theory, knowledge of the basics of modern macro- and microeconomics, general theory of management decisions, the ability to apply economic and mathematical methods and models to optimize innovative solutions;

- sociability and ability to work with people, which requires tolerant cooperation of the manager with colleagues, subordinates, senior management in order to achieve the goals of innovation, as well as an objective assessment of the effectiveness of the knee and the team as a whole;

- competence in the field of innovative specialization of the enterprise, which requires knowledge of the technology of innovation processes, theoretical and practical aspects of innovation, their impact on the stage of development of both enterprises and features of the region.

The nature of the activities of a particular manager is determined by the composition of the powers delegated to him to make management decisions. The composition of these powers is determined by the system of division of labor and specialization of management personnel in accordance with the horizontal and vertical division of labor.

Innovative managers are creative workers, ie managers of the research type, whose characteristic feature is a research approach to solving problems using various methods of extraordinary thinking. Innovation management is aimed at ensuring the effective functioning of the innovation process within the enterprise with the opportunity to increase its competitiveness.

According to the goals, the following most important functions of innovation managers are formed:

- study and evaluation of world trends in scientific and technological development;

- development of strategic innovation policy and mechanisms for its implementation;

- formation of strategic, long-term and short-term goals of innovation;

- development of plans, programs, projects and their implementation;

- creation of organizational and production structure and management structure of innovation activity;

- planning the organization of innovation development processes (innovation process);

- monitoring and control over the implementation of stages, stages of the innovation process in time and synchronization of all activities;

- personnel management of divisions engaged in innovative developments and projects;

- operational management, calendar planning and control of its implementation.

In the practice of managing innovation processes are widely used methods of systematic analysis of emerging problems, probability theory, modeling of decision-making processes, situational approach, which allows creative use of adequate situation, scientific management techniques.

The main rules of the organization of innovation management at the enterprise are:

- research style of decision making;

- creative approach to forecasting and analysis of unforeseen situations;

- increasing the efficiency of innovation development management;

- the principle of the central situation;

- the optimal number of levels in the management structure with the place of operational decision-making in the system of research - production - sales.

The first rule is implemented when own research and internal expertise are combined with the involvement of specialists from scientific organizations, universities and consulting centers. The creative approach is implemented in the use of systematic analysis of emerging problems, economic and mathematical modeling of decision-making processes in each of the functions of innovation management. For an innovative manager, a creative atmosphere is important, which stimulates the search for and development of new ideas. The principle of increasing the efficiency of innovation development management must be followed, because in the external environment there is a rapid renewal of goods and technologies. The principle of the central situation is to identify and prioritize key factors in managing the development of enterprise subsystems in accordance with strategic objectives.

2.2. Analysis of innovative capabilities of the organization. The organization's receptivity to innovation.

The susceptibility to innovation is influenced by several factors. One of the main science-intensive products, which is determined by the degree of use of new advances in science and technology in the formation of its properties. Of great importance in its creation is the availability of equipped research laboratories, the possibility of attracting highly qualified scientific and engineering personnel. However, in terms of the perception of innovation by the organization, the impact of knowledge-intensive products is controversial. On the one hand, the higher the science-intensiveness of the product, the better prepared the company is to ensure readaptation to radical innovation. On the other hand, increasing knowledge intensity is accompanied by increasing the complexity of products and, consequently, increasing the cost of innovation, as well as increasing the complexity of the organization of production, which can lead to a conservative attitude to innovation.

The next factor influencing susceptibility is the variability of technology. According to variability, there are three types of technologies: stable, fruitful, changeable.

Stable technology remains unchanged throughout the life cycle of products produced by this technology. Scientific and technical development of production with this type of technology is carried out only through the modernization of products and improvement of certain parameters of

the technological system. Stable technology at the stages of accelerating and growing demand provides an increase in profitability, which is supported by staff and the organization as a whole, ie the characteristic progressive perception of such innovations.

With fruitful technology, the basis for the technology is maintained for a long time. At the same time, new generations of modernized products with the best quality indicators in the "innovative conveyor" mode are developed and manufactured. Development and mastering of production of new samples of production become a decisive factor of economic success. Such a policy of technical development can ensure not only the restoration of products "but also the extension of the life cycle of technology or goods, ie increase the fruitfulness of technology.

In order for the development of such an enterprise to be effective, it is necessary to form and constantly update the bank of ideas, technical innovations, apply an effective system of selection and evaluation of the best ideas. This concept allows for gradual financing of investments in the development of production through the depreciation fund, profits and income from the placement of shares, avoiding one-time large investments, which will ensure a progressive perception of innovation in the enterprise.

With changing technology, the production of new products (not modifications) leads to the need to change the basic technologies, ie the existing technological system is closed to radical innovations. When such changes are needed, this technological system ceases to serve as a basis for scientific and technological development and must be radically transformed or replaced with a new one. As the variability of technology increases, the need for more radical innovations increases and at the same time the degree of openness of the technological system for the introduction of innovations decreases. A paradox arises: the more variable the technology, the more it resists change.

Another important factor influencing the susceptibility to innovation is the scientific and technical level of the technological system. If with several generations of technologies, the closer in this series of variables and elements, the easier it is to attract a new element into the system: the element of the 1st generation is easier to replace the element of the 2nd generation, more difficult - the element of the 3rd generation , even more difficult - on the element of the 4th generation, etc. Thus, the smaller the gap between the generations of old and new elements of the system in a number of developments, ie the higher the scientific and technical level of the technological system, the more it is open to innovation.

Hence the conclusion about the relativity of the perception of radical innovation. This relativity is determined by the achieved scientific and technical level of production: the lower it is, the greater the leap in development must be made at the enterprise and, consequently, the greater the gap in the properties of replacement elements and the more radical the organization's innovation.

Thus, the susceptibility of the organization to innovation is determined by certain structural and organizational, social and economic parameters, as well as the parameters of the management system (Table 5.1). Such a parameter of the organization, as a form of ownership, is able to provide different conditions for technical development and identify specific factors in the perception of innovation.

The higher the knowledge intensity of the product, the higher the share of engineering work required for its production, and the greater the share of engineering and technical workers facilitates the perception of radical innovations. Intimate such a factor due to this parameter is the level of motives for creative work: increasing the complexity of products helps to strengthen the

internal motives of creativity, which play an important role in creating and implementing radical innovations.

The influence of the parameters of the technological system on the perception of innovations [60, p. 275]

Technological system parameter	Factors of perception due to the parameter of the technological system	Hypotheses about the influence of parameters on the perception of innovations
The degree of integrity and separation of system elements	• - continuity in the development of the properties of subsequent generations of the system; • - policy and tactics of development of the system implemented by the enterprise	• - technological systems 3 with a high degree of isolation of their elements are open to minor innovations of low radicalism; • - integrally separated systems are more open to innovations of medium scope and medium radicalism and semi-closed to innovations of small scale and small radicalism; • - highly integrated systems are open to innovations of high radicalism, covering almost the entire system, and semi-closed or closed to less radical innovations
Science-intensive products	• - availability of properly equipped research laboratories and test facilities; • - rational standardization; • - rational combination of the degree of integrity and separation of the technological system	- the higher the knowledge intensity of the products, the greater the need for innovation, the higher the openness of the technological system for radical innovation
Variability of technology	• - qualified selection of innovations; • - operation of the innovation pipeline; • - system of priorities in the pipeline of innovations;	With increasing variability in technology, the need for more radical innovations increases and at the same time reduces the degree of openness of the technological system for innovation:

	• - the presence of their own or holistic development systems formed from internal and external structures	- stable technologies need little radical innovations and open to them; • - fruitful technologies need innovations of small and medium radicals and are open to the pipeline of innovations; • - changing technologies are closed to radical innovations, supported by innovations of small and medium radicals and are developed due to radical transformations or replacement with new ones
Scientific and technical level (NTU) of the technological system	• - compliance with the continuity of properties in the series of elements of the system; • - development of technological system by replacement of elements	- the higher the NTU technological system, the more open it is to innovation

Table 5.2. Influence of the properties of the organization on the perception of innovations [60, p. 276]

Organization parameter	Hypothesis about the influence of the parameter on the perception of innovations	Perception factors due to the parameter
1	2	3
I. STRUCTURAL AND ORGANIZATIONAL PARAMETERS OF THE ENTERPRISE		
Product intensity (as a parameter of the organization)	The higher the knowledge intensity of the product, the greater the need for innovation, the easier it is to perceive radical innovations and the less difficult it is to readapt to them.	• - high share of engineering work; • - availability of conditions for involvement and training of highly qualified personnel;

		- high level of motives for creative work.
The scale of the organization	The impact of the scale of the organization is controversial: - larger enterprises usually have a higher investment potential and concentrate qualified personnel, which ensures the perception of innovation; - larger inertial enterprises, which hinders innovation The higher the scale of the organization, the easier the perception of large-scale innovations	• - profit, availability of investment resources; • - prestige in business circles and in the market; • - availability of conditions for engineering creativity; • - flexibility of the control system; • - the habit of the organization to implement large-scale activities; • - the presence of advantageous strategic positions in the strategic areas of the company
The structure of the organization	• - high integrity of the enterprise structure promotes radical innovations and prevents evolutionary changes; • - a high degree of isolation contributes to evolutionary innovations; • - rational combination of parameters of integrity and isolation of the structure of the organization allows to carry out innovations in a wide range of their radicalism	• - flexibility of the structure, its ability to adapt to innovations; • - leadership style (in integral structures - the presence of authoritarian style, in isolated - the presence of liberal-democratic style; combining the properties of integrity and isolation • - a combination of authoritarian and liberal-democratic styles)
The state of the development system	- the presence of its own system of development allows to combine different strategies and flexible tactics of development, provides a progressive perception of their own innovation projects within their broad limits of radicalism;	- availability of own subsystem of product development: laboratory-search and design divisions, trial productions and bases for carrying out the researches providing product development;

Continuation of the table. 5.2

1	2	3

	- the presence of integrally separated emerging development system from internal and external elements, provides progressive perception innovations on own projects and copying innovations on external ones projects	• - availability of own subsystem of technology development; • - availability of own design and assembly and construction organizations; - the presence of a holistic system of development, consisting of internal and external elements (their cooperation and interpenetration)
II. SOCIAL PARAMETERS OF THE ORGANIZATION		
	- state form of ownership provides the perception of radical innovations in large science-intensive production;	• - centralization of technical development management; • - support of transformative innovations by the state (possibility of centralized capital investments, preferential credits, tax privileges, favorable state order);
•	- the joint-stock form of ownership provides perception of innovations of competitive and innovative character;	- the presence in the joint-stock company of a real cell interested in increasing the company's equity;
	- collective form of ownership with the distribution of the contribution of employees of the enterprise provides the perception of innovations of production and competitive nature;	• - active participation of employees in management; • - high level of income with high internal motivation of individual employees and microgroups; • - accumulation of equity;
•	- private ownership provides the perception of innovations of industrial and competitive nature in small enterprises	• - high level of income with high internal motivation; • - competence of the owner in managing technical development.

Level of social development	- the higher the level of social development of the organization, the more progressive perception of innovations in the whole range of their radicalism	• - internal motivation of work; • - staff qualifications; • - involvement of employees in the process of technical creativity

Continuation of the table. 5.2

1	2	3
Social security of staff	- Lack of social protection of staff from the negative effects of technical development causes resistance to innovation	• - directing technical development to the social interests of employees and increasing work motivation; • - organizational innovations that compensate for the negative consequences of technical development; • - the presence (creation) of the internal labor market
III. ECONOMIC PARAMETERS OF THE ORGANIZATION		
Competitiveness	- the higher the competitiveness, the more progressively perceived innovations that correspond to the nature of changes in the external environment (competitive, innovative and entrepreneurial types)	• - high NTU production process; • - marketing approach to product development and planning of R&D and production; • - flexibility of reaction to changes in the external environment of the company
Type of reaction to changes in the environment	• - cultivating style of behavior causes a conservative perception of innovation; • - entrepreneurial style of behavior causes a progressive perception of innovation;	• - instability of the external environment; • - level of state support for entrepreneurship; • - the effectiveness of the information system on the external environment of the

	• - the higher the level of entrepreneurial reaction (competitive - innovative - entrepreneurial response), the more progressively perceived innovations of medium and high radicals	company, including the behavior of competitors	
Capital structure	The presence in the company's capital structure of large amounts of retained earnings and (or) a large share of paid-in capital in the equity structure, which allows you to successfully issue additional shares, allow you to finance profitable investments in radical innovations from equity	• - dividend policy, which ensures the accumulation of profits in the absence of profitable investment projects; • - excess of the actual value of the indicator "share price / earnings per share" over the market average	•

In contrast to the active participation of small enterprises in innovation activities in the West, according to official statistics, the degree of spread of innovation processes in domestic small business lags behind. Thus, on average, only about 6% of industrial small enterprises are innovative, while for medium-sized enterprises in Germany a similar figure - 16%, large - 40%, and, for example, small - more than 60%. Most small Ukrainian companies do not have the capacity or, due to the low level of management, do not see promising benefits in attracting high-tech achievements. Innovation potential - the ability and willingness to innovate. Thus, this category characterizes the potential and availability of resources for innovation. In topic 3, the concept of potential (Latin potentia - power, capacity) was considered at the macro level, but economics is studying this phenomenon at the enterprise level. Most scholars view the potential of the enterprise as a unity of technical, economic, social, psychological, managerial and other aspects.

There are industry specifics of capacity building depending on the nature of technological processes, features of the organization of activities, differences in the characteristics of the final product and resources for its production, markets. The potential can be assessed by the ability (readiness and sufficiency) of the system for innovation. Potential analysis can be performed using a resource methodological approach. The level of innovation potential can be determined using full parameters.

- material and technical components: technology, equipment, materials, raw materials, information and communication tools;

- financial and economic: resources that provide innovation activities in the long run, implementation of programs and projects, the cost of IIDKR, the availability of venture capital and the possibility of creating venture small businesses within the company;

- market and situational components: consumer and technical characteristics of the product / service, products-analogues of competitors, the speed of physical and moral obsolescence;

- qualification and quality components: level of qualification, education, experience of specialists and workers;

- structural and functional: management culture, organizational structure, effective methods of innovation management from the standpoint of the final knowledge-intensive material (intellectual) product.

The innovative potential of the enterprise is characterized by the ability to develop, its alternative, the priority of economic interests, quality, capacity. Each component is important and in the complex they provide great potential. Yes, specialists are a source of new knowledge and ideas. The company must create an organizational structure in which it is possible to identify promising ideas. There should also be mechanisms to support and bring ideas to commercialization. No company will survive in a highly competitive environment if it is not development-oriented. Potential depends on the ability to attract and support cutting-edge talent and leaders. Today's development advantage will turn into a normal operating advantage tomorrow. Understanding future values, the company is able to move forward faster than competitors, and this is what ensures long-term success. Enterprises with great scientific and technical potential compete more successfully in the market by improving and updating their products. An important role in the formation of innovation potential is played by management, namely the ability of management to quickly make decisions, identify relevant innovation goals, benchmarks and coordinate functions, tasks, uniting people with different levels of skills, education, experience, creative focus on development and the introduction of new ideas.

Analysis of the competitive advantages of the organization can be done in different ways. Commonly used methods of strategic management (Boston Consulting Group matrix, GAP analysis, SWOT analysis, McKinsey model), financial and economic (break-even point, ratios, statistical analysis, functional-cost analysis). Since they are not the main subject of the discipline, it is impractical to consider them in detail here (see the Recommended literature on the topic). However, it should be emphasized that maintaining development is possible only through innovation, so now there is a revision of the traditional method of assessing the value of the enterprise. How to assess the company's ability to achieve better results than competitors? However, only up to 20% of enterprises (depending on the field of activity) are able to maintain stable high results. The rest do not form an effective innovation plan, focusing on profits, costs and taking into account only their own previous experience. There is a situation when successful powerful enterprises do not look so good in terms of future value. The optimal option is when the dark growth of enterprise profits outpaces or at least ns less than the growth rate of gross domestic profit. The development of innovation opportunities and the commercialization of new ideas forms the basis of the innovation strategy. According to Fig. 6.3 shows a model of increasing the future value of the enterprise, consisting of five components: new opportunities, ie unfilled market niches; sources of income; growth potential; culture and organization of activity; employees and their available and potential opportunities. costs and take into account only their own previous

experience. There is a situation when successful powerful enterprises do not look so good in terms of future value. The optimal option is when the dark growth of enterprise profits outpaces or at least ns less than the growth rate of gross domestic profit. The development of innovation opportunities and the commercialization of new ideas forms the basis of the innovation strategy. According to Fig. 6.3 shows a model of increasing the future value of the enterprise, consisting of five components: new opportunities, ie unfilled market niches; sources of income; growth potential; culture and organization of activity; employees and their available and potential opportunities. costs and take into account only their own previous experience. There is a situation when successful powerful enterprises do not look so good in terms of future value. The optimal option is when the dark growth of enterprise profits outpaces or at least ns less than the growth rate of gross domestic profit. The development of innovation opportunities and the commercialization of new ideas forms the basis of the innovation strategy. According to Fig. 6.3 shows a model of increasing the future value of the enterprise, consisting of five components: new opportunities, ie unfilled market niches; sources of income; growth potential; culture and organization of activity; employees and their available and potential opportunities. The optimal option is when the dark growth of enterprise profits outpaces or at least ns less than the growth rate of gross domestic profit. The development of innovation opportunities and the commercialization of new ideas forms the basis of the innovation strategy. According to Fig. 6.3 shows a model of increasing the future value of the enterprise, consisting of five components: new opportunities, ie unfilled market niches; sources of income; growth potential; culture and organization of activity; employees and their available and potential opportunities. The optimal option is when the dark growth of enterprise profits outpaces or at least ns less than the growth rate of gross domestic profit. The development of innovation opportunities and the commercialization of new ideas forms the basis of the innovation strategy. According to Fig. 6.3 shows a model of increasing the future value of the enterprise, consisting of five components: new opportunities, ie unfilled market niches; sources of income; growth potential; culture and organization of activity; employees and their available and potential opportunities. Figure 3 shows the model of increasing the future value of the enterprise, consisting of five components: new opportunities, ie unfilled market niches; sources of income; growth potential; culture and organization of activity; employees and their available and potential opportunities. Figure 3 shows the model of increasing the future value of the enterprise, consisting of five components: new opportunities, ie unfilled market niches; sources of income; growth potential; culture and organization of activity; employees and their available and potential opportunities.

Thus, for good governance, better leaders need to realize that change is not driven by crisis but by new opportunities. Therefore, the changes create new needs of the enterprise and they must be identified based on an assessment of the current situation and relevant prospects.

Lecture 3. Management innovative projects .

3.1. Stages project preparation and implementation . Concept innovation project.

3.2. Classification of innovative projects.

3.1. Stages project preparation and implementation . Concept innovation project.

innovative project - a planned set of technical , production , economic and organizational combined activities _ one general (main) place . He consists of several stages process " research - production ", agreed on resources, deadlines and performers , and carried out single management. For another defined , it is a system of interconnected goals and programs their achievement , which is a set of research , development , production , organizational , financial , commercial and other measures , respectively organized , decorated with a set of design documentation that _ provide effective solution of specific scientific and technical task (problem), expressed in quantitative terms indicators , and contribute innovation .

The innovative project covers the following mandatory structural elements:

- goals and objectives;

- functional and executive structure (complex of research and development, work on training and retraining of personnel, import and export of licenses, implementation, development and sale of innovations);

- feasibility study and resource rationale (indicators of costs, timing and effect);

- organizational and economic structure (rights and responsibilities of the customer, contractors, financing, squeezing and acceptance of works, sanctions, bonuses).

According to the scale and level of interaction of units during the implementation of innovative projects and according to the significance of the results, they can be divided into two main groups:

- projects in which a group of units is involved, the results of which are reflected in the business plan of the organization, and the amount of costs requires the allocation of significant resources that are subject to centralized control;

- localized projects, in the implementation of which only one or two interacting units or the target temporary team are involved.

Examples of innovative projects of the first type can be:

- reconstruction (expansion) of production units;

- replacement of large-scale technological equipment is fundamentally new;

- transition to the use of new materials;

- development and implementation (or only implementation) of complexes of technological innovations during the development of new products.

The goals of local innovation projects include: the introduction of certain technological innovations, partial replacement of equipment, improving the quality of certain products. Project activities can be aimed at solving the following main tasks:

- creation and production of products of high technical level and quality, competitive in domestic and foreign markets;

- reduction of terms of development and development of production of new production;

- exit to new markets or market on foot;

- ensuring consumer loyalty to the company's products and creating a positive image.

A complex innovative project serves to solve scientific and technical problems. Its main characteristics are complexity, quantification of scientific and technological development goals, balance of resources required for project implementation. Continuous management and coordination of implementation processes allows you to choose ways and means to most effectively achieve project objectives. Managers involved in project implementation need to take special courses in project management, which address issues such as integration management, content, time, cost, quality, manpower, information, risk, and more.

Stages of the innovation project:

1. Pre-investment stage:

- generating and concretizing an innovative idea;

- elaboration of the idea, development of possible options;

- choosing the best option.

2. Investment stage:

- preparation of contract documentation;

- project implementation;

- control and operational regulation of the implementation of calendar plans and resource costs;

- submission of project results to the customer and its completion.

Thus, for the successful management of an innovative project it is necessary to: justify the need and determine the location of the project; to study in detail the characteristics of new technology, products, etc .; determine the timing and resources of individual stages of the project as a whole (practitioners believe that a period of more than three years is associated with a high risk of project failure). During the implementation it is necessary to carry out systematic monitoring, evaluation and reporting on project implementation.

Innovation project concept .

The concept of an innovative project should determine the options for its implementation, form the main goals and expected end results, assess the competitiveness and prospects of the project results, as well as assess the possible effectiveness of the innovative project. The following stages can be distinguished in the process of developing the concept of an innovative project:

• formation of an innovative idea and goal setting of the project;

• marketing research of the project idea;

• project structuring;

• risk and uncertainty analysis;

• choice of project implementation option.

Consider briefly each of these stages.

Formation of an innovative idea and goal setting of the project.

The emergence of an innovative idea is the starting point from which the development of an innovative project begins. The formation of an innovative idea is considered from two points of view. On the one hand, the innovative idea is the basis, the essence of the innovative project, which is reflected in the general (ultimate) goal of the project (the idea of creating a new product or service, the idea of organizational change in industry, region, enterprise, etc.). At the same time, the formation of an innovative idea (plan) means a planned action plan, ie ways or means to achieve the goal of the project.

Already at this stage, alternative solutions to the problem are identified. An idea can arise spontaneously or be the result of a long process, it can be the result of "collective examination" or individual analysis.

The methods of generating and forming an innovative idea include well-known intuitive methods:

• identification of opinions (interview method);

• questionnaires (sample surveys);

• script writing:

• "brainstorming";

• morphological analysis;

• Delphi method , etc.

Marketing research project ideas. In parallel with the formation of the innovative idea of the project, its marketing research is conducted. The purpose of this stage is to determine the scope of the project on the development of the national economy and, as a consequence, to quantify the purpose of the project and objectives for individual periods. The ultimate goals and objectives of an innovation project can not always be set in the form of specific quantitative indicators at the stage of selection and justification of the problem (innovation idea). Therefore, the actual development of the project should begin with a quantitative clarification of the ultimate goal of the project and the establishment of intermediate objectives for its implementation for individual time periods for different implementation options.

For this purpose:

• potential consumers of the target product of the project are identified;

• the possibilities and economic expediency of replacing the manufactured products with new types of target products are analyzed;

• the structure of industries that provide the project with raw materials, energy resources, components, etc .;

• new areas of use of the final product of the project are analyzed;

• the economic and social consequences of the project implementation are studied.

At the stage of marketing research, general methods of marketing innovation should be used. The results of marketing research are expressed in specific quantitative values of the target parameters of the project.

Structuring an innovation project. The target parameters of the project set in the previous stages are the basis for forming a list of project measures to achieve the ultimate goal of the project. To determine the composition of the necessary measures, the ultimate goals are pre-structured, ie divided into constituent elements. Practice has shown that in the structuring of the project it is necessary to distinguish between two types: functional and problem.

Functional structuring of the project. When structuring an innovative project , first establishes the composition of functional elements, which sum complete complex its solution. The tool of such functional structuring of the problem in project development is the "goal tree." The goal tree is a hierarchical system that has a number of levels at which are consistently detailed goals to be implemented. Thus the purpose of each following level should provide realization of the purposes of the higher level .

The construction of the "goal tree", ie the consistent division of the ultimate goal of the project into its constituent elements, is based not on formal dependencies , but on the use of mostly expert assessments.

For each of the identified elements, including alternatives, a limited list of the most important targets is determined, which characterizes their scientific and technical level and reveals the content of the target indicators of the elements of the higher level. Based on private development forecasts

of each element and taking into account the formed proportions, specific costs and cost norms, the possible values of targets for individual periods of project implementation are calculated.

In determining the values of targets should be based on the need to ensure the target parameters of the relevant element of the higher level. The calculation of target parameters for the elements of the "goal tree" is carried out by sequential unbundling from the highest level to the lowest.

In addition to the targets, it is recommended to set limiting parameters for each of the elements of the "goal tree", which determine the special conditions for achieving the goals. The composition of such parameters and their values are selected and arranged by experts based on the specifics of the project. Restrictive parameters set the requirements that must be met during project implementation. It should be borne in mind that the limiting parameters, which are the conditions for achieving the targets, dramatically reduce the number of possible ways to solve the problem.

Thus, the establishment of the composition of the limiting parameters of the project and their qualitative values can be considered as the first and largest stage of feasibility study of the project implementation option.

Problem structuring of the project. The constructed tree of goals is then reformulated into a problematic system of tasks and activities, which also has a hierarchical structure and is called the "tree of works".

If the "goal tree" establishes the necessary means to achieve the project objectives, the set of measures ("work tree") should determine the ways and means of obtaining the established means. The compositional principle of consistent aggregation of lower-level works into topics, tasks, and higher-level problems should be used in the formation of measures.

The list of necessary measures is developed in the following sequence:

• the possibility and expediency of providing target parameters by expanding the production of traditional equipment is studied;

• measures are formulated for the development of results in production earlier than completed R & D;

in the absence of scientific support, the possibility is studied

measures are taken to use the experience of foreign countries on the basis of purchasing licenses, equipment or documentation;

• proposals are developed in the direction and specific topics of research.

The set of works established on the elements of the lower level of the "goal tree" is combined in the following stages of project development into topics, tasks and stages related to the creation of the relevant elements of the higher level. The "work tree" obtained in this way is one of the possible options for project implementation. Any of the options that can achieve the goal of the project should be considered acceptable. Within the established limiting parameters of the project, the allowable options for its implementation may differ in technological methods of product production or proportions in the distribution of its production by technological methods, types of raw materials, quality characteristics of the target product, methods of meeting the need for it.

The result of project structuring is a list of measures (composition of tasks, topics and works), the implementation of which is necessary to ensure the achievement in a timely manner of the target values of the project for each of its implementation options.

Risk and uncertainty analysis. One of the most significant features of innovative projects is that projects are implemented in conditions of risk and uncertainty. Uncertainty means incomplete or inaccurate information about the conditions of the project, including the associated costs and results. Uncertainty associated with the possibility of adverse situations and consequences during the project implementation is characterized by the concept of risk. Risk factors and uncertainties should be taken into account in the calculations of efficiency, if under different possible conditions of realization of costs and results of the project are different. The following types of uncertainty and investment risks are the most significant when evaluating projects:

• risk associated with the instability of legislation and the current economic situation, conditions of investment and use of profits;

• foreign economic risk (the possibility of imposing restrictions on trade and supply, the presence of strong competitors, etc.);

• uncertainty of the political situation, the risk of adverse socio-political changes in the country or region;

• incomplete or inaccurate information on the dynamics of technical and economic indicators, parameters of new equipment and technology;

• market fluctuations conjuncturicin exchange rates , etc .;

• production and technological risk (accidents, equipment failures, production shortages, etc.);

• uncertainty of goals, interests and behavior of participants;

• incomplete or inaccurate information about the financial position and business reputation of the participating organizations (possibility of non -payment , bankruptcy, breach of contractual obligations).

The result of risk analysis during the development of an innovative project is expressed in determining the probability of implementation of its various options.

Choice of innovation project implementation option. Choosing from the available options of the most viable innovative project is one of the most responsible project development procedures. The main tasks of this stage:

• establishing the main criteria (indicators) of efficiency of the innovation project;

• calculation of performance indicators of alternative project options taking into account the probability of their implementation;

• comparison and selection of an innovative project option for implementation.

To take into account the uncertainty of the conditions in the implementation of the project option, the indicators of the expected integrated effect are calculated (economic - at the level of the national economy, commercial - at the level of the organization).

If the probabilities of different conditions of the project are known exactly, the expected integral effect is calculated by the formula of mathematical expectation

ож = ∑ *E* and *P* and ,

where Eozh is the expected integral effect of the project;

and - integral effect under this condition of implementation;

Ri - probability of realization of this project.

+

In the general case, it is recommended to calculate according to the formula

Еож = h- Emax + (lh) - Emn

where Etah and Etin are the largest and smallest of the mathematical expectations of the integral effect according to the admissible probable distributions; h is a special standard for accounting for uncertainty

effect; it is recommended to take at the level of 0.3.

It is recommended to compare the project options and choose the best of them using the following methods: net discounted income (NPV) or the expected integrated effect; profitability index (YI); internal rate of return (GNP); payback period: calculation of break-even point and others that reflect the interests of participants or the specifics of the project. When using indicators to compare different projects (project options), they must be brought to a comparable form and can be determined by the minimum of the costs. It is necessary to dwell on the calculation of the break-even point.

Break-even point characterizes the volume of sales at which gross sales revenue coincides with gross production costs. Gross costs are the sum of fixed (ie not changed over time and not dependent on changes in production and sales) costs and variables (the value of which varies in proportion to changes in production and sales). To confirm the viability of the project (project variant) it is necessary that the value of the break-even point is less than the values of nominal production and sales. The farther from them the break-even point value (in%), the more stable the project.

The decision to invest in the project should be made taking into account the values of all these criteria and the interests of all participants in the innovation project.

Thus, the development of the concept of innovative project covers research and all stages of feasibility study of innovative projects (from goal setting to choosing the most effective option to achieve it).

3.2. Classification of innovative projects.

There are several classification features on the basis of which the systematization of the whole set of projects is carried out:

1. Depending on the scope:

- research;

- scientific and technical;

- organizational;

2. By level of decision:

- state;

- regional;

- enterprises accepted at the level of the organization.

3. By type of innovation:

- new product;

- new service;

- new method of production;

- new method of management;

- new market;

- a new source of raw materials.

4. For existing systems:

- subversive innovative projects that offer a completely new system, involving the abandonment of existing models aimed at capturing existing or completely new markets;

- supporting innovative projects aimed at improving existing systems, improving their quality.

5. By degree of completion:

- completed;

- intermediate.

6. By scale (Table 7.1):

- small projects;

- medium projects;

- megaprojects.

Table 7.1 . Classification projects on the basis of scale

Indicator	Small project	Medium project	Megaproject
Amount investments	up to 10-15 million dollars. USA	from 15 ml to 1 billion US dollars	more than $ 1 billion USA
Labor costs	up to 40-50 thousand man -hours	from 50 thousand to 15 million people - hours	2 million man -hours for design , 15-20 million man -hours for construction
Duration implementation	up to 1 year	from 1 year to 5 years	5-7 years
Complexity management systems	One project manager , flexible organization system management	team of leaders	complex management system with mandatory coordination at regional , state or interstate levels
Involvement foreign participants	does not require	possible in some cases	usually requires

Impact on the socio - economic condition of the region	does not perform	performs on municipal levels	performs at regional , state or interstate levels

7. In terms implementation :

- short-term (high-speed) (up to 1 year);

- medium -term (from 1 to 5 years);

- long-term (over 5 years).

Short -term (high-speed) projects are usually typical for companies with a range products that _ quickly updated , on restoration work, when creating research facilities , etc. For the implementation of such projects the time factor is decisive , so the customer may to accept decision of significant magnification primary value project implementation .

8. By quality :

- ordinary projects ;

- defect-free projects - provide the highest achievable level quality as dominant factor . As a rule, they require large investments and are used in industries in which at least deviation from the standard threatens catastrophic consequences (eg nuclear _ energy).

9. Significance boundaries and objectives of the project:

- multiprojects ;

- monoprojects .

Multiproject accepted call implementation several orders within investment programs the customer .

If _ _ _ the company for some reason sells sprat short-term projects , their totality is investment program enterprises .

Monoproject as an alternative to multiproject has clearly outlined resource and time limits that _ apply separate project.

10. By quantity partner countries :

- national ;

- international .

Lecture 4. Management risks in innovation .

4 .1. Fundamentals of risk management theory.

4.**2. The essence of the concept of risk, its economic nature.**

4.**3. Causes, types, classification of risks.**

4 .1. Fundamentals of risk management theory.

In the conditions of objective existence of risk there was a need for a certain mechanism, which

allows you to take into account the latter in making and implementing business decisions. Such a mechanism

became risk management (risk management).

Risk management is a set of methods, techniques and measures that allow a certain

to predict the occurrence of risky events and take measures to exclude or reducing the negative consequences of such events.

Risk management is considered as a specific branch of management that requires knowledge

subject activity of the firm, insurance business, analysis of economic activity of the enterprise,

mathematical methods for optimizing economic problems.

Risk management is a specific area of economic activity that requires deep knowledge in the field of analysis of economic activity, methods of economic optimization decisions, insurance, psychology and more. The main task of a specialist in this field find an option that provides the best, for a given activity, a combination of risk and profit.

The risk management process includes: risk forecasting; determining their probabilities

size and consequences; development and implementation of measures to prevent or minimize related

risks of losses.

In the world and domestic special literature, the concept of "risk management" (risk management) is used in a broad and narrow sense. In a broad sense

Risk management is the art and science of providing conditions successful operation of any production and economic unit in conditions of risk; in narrow - is the process of developing and implementing a program to reduce any accidental losses of the firm.

Risk management as a specific activity appeared in the late nineteenth century. Exactly then, with the emergence and development of new means of transportation, with the construction of the largest

industrial enterprises, there is a need for risk management. The first management plan risks was drawn up in the United States in the 90s of the XIX century for the company engaged railway construction. But before World War II, risk management was not widespread application.

In the postwar period as a result of the scientific and technological revolution appeared new expensive technology,

advanced technologies. Thus, man himself has created sources of great risks (broad development of transport, construction and development of the largest industrial productions, etc.). All this has led to a sharp increase in both technical and economic risks. Therefore, in the 50s of XX century.

Risk management has become relevant, leading to the emergence of a new profession of manager

risk management. However, the highlight of the risk management process itself and the emergence of professional Risk management managers were established only in the early 70's. During this period

risk management was mainly associated with private risk management, primarily financial, less production, as well as (under the special name of current analysis) insurance. However, by the end of the XX century. the prevailing view of the universal character appropriate methodology, which led to its rapid development and expansion into new areas.

By the beginning of the XXI century. risk management has become more or less a standard element

management not only large but also medium and small firms.

In our time, risk has become an integral part of the economic process. In this regard,

Risk management has become an independent type of professional activity, which is performed by special

institutions, insurance companies , financial managers, risk managers, etc.

The main tasks of a risk management specialist are: identifying areas increased risk; risk assessment, risk acceptance analysis for the enterprise;

development of measures to prevent or reduce the level of risk; proposals for action regarding the maximum possible compensation for the damage caused in the event of a risk situations.

dynamic professional activities is developing. Many Western firms have a special position - risk manager (risk manager), whose responsibilities include ensuring the reduction of all types of risk. Risk manager,

together with relevant specialists, participates in making risky decisions (for example, extradition

credit or choice of investment object) and is looking for ways to avoid unwanted risks. These

actions and is a risk management system.

Risk management requires knowledge in the field of firm theory, insurance, analysis economic activity of the enterprise, etc.

The risk management process includes the following stages:

1) identification of the anticipated risk;

2) risk assessment;

3) choice of risk management method (s);

4) application of selected methods;

5) evaluation of results.

According to the modern concept of risk management, risk management is possible

considered as a system or as a process.

As a risk management system includes: management objects - managed

subsystem; subjects of management - the management subsystem (Fig. 3.1).

The risk management system consists of two subsystems: the subject of management

(risk specialist; managers; decision makers) and the object of management (risk)

capital investment; relations between economic entities).

The subject of management is a special group of people who carry out purposeful functioning of the object of management, using various methods and techniques of management impact.

The object of management is directly risk, risky capital investments and economic relations between subjects in the process of entrepreneurial activity.

The management process is the process of influencing the subject on the object of management and can

be carried out under the condition of circulation of certain information between the control and managed subsystems.

The management process always involves the receipt, transmission, processing and use of information.

In this case, obtaining reliable and sufficient information in these conditions plays a major role,

as it allows the businessman to make the concrete decision on actions in the conditions of risk. Any economic decision is accepted in the conditions when results are not defined, and the information

limited. The cost of complete information is calculated as the difference between the expected cost of any event when complete information is available and the expected cost when information is incomplete.

Information support can be considered the most important element in the management structure risk, the reliability and quality of which depends on the magnitude of business risk, acceptance correct business decisions.

Both the object and the subject of the economic risk management system are responsible performing specific functions.

The functions of the control subsystem are the organization:

 addressing issues related to risk, risky capital investments ;

 work to reduce the degree of risk;

 risk insurance process; economic relations and relations between the subjects

management.

The functions of the managed subsystem are:

1) forecasting (development for the future of changes in the financial and economic condition of the object and its

parts);

2) organizations (associations of people involved in risk management, based on certain

rules and procedures: creation of governing bodies, construction of the structure of the administrative apparatus,

development of norms and standards);

3) regulation (impact on the object of management, through which the situation of stability is achieved

this object in case of deviations from the specified parameters);

4) coordination (coherence of all parts of the risk management system, management staff

and specialists);

5) stimulating (encouraging specialists to be interested in risk management);

6) control (verification of the organization of work to regulate the level of risk).

Ideally, there should be a governing body for risk management to function

risks with certain functional responsibilities and the necessary material, financial,

labor, information resources. A special subdivision should be created at the enterprise

- risk management department (or) headed by a risk manager (for small ones)

Information about

economic situation

(external information)

Management subsystem

(risk management entity)

A group of executives led by a risk manager who provides

purposeful and uninterrupted

operation of the enterprise

Managed subsystem (control object)

Internal and

external factors

risk

Risky

attachments

capital

Economic relations

between subjects

management

Feedback information _

(information about the state of the control object)

enterprises, the responsibilities of a risk manager can be performed by a financial manager). Majority

large western firms have a special risk manager in their staff who shares

responsibility for risky decisions with other managers of the company (marketer, manager of

personnel, safety engineer). He is one of the first assistants to senior management.

The risk manager, along with the relevant specialists, participates in the acceptance of risk

decisions (lending, choosing the object of investment) and looking for ways to avoid unwanted

risks.

The functions of the risk management manager are:

1) forecasting the state of development of the object of management on the basis of existing trends;

2) formation of the organizational structure of risk management at the enterprise;

3) development of basic provisions and instructions for risk management;

4) ensuring the coherence of the entire risk management team;

5) motivation of employees of all levels of risk management;

6) control over the functioning of the risk management system and correct deviations from

planned results.

The business risk management department must deal with the decision

practical issues related to risk identification, statistical and registration

incident handling, development and implementation of measures to improve the security of the enterprise,

carrying out insurance activities, concluding insurance and reinsurance agreements. In general

the ideological task of the risk manager and his departments is to develop a strategy and principles

enterprise risk management, which should be set out in internal regulations

documents.

Risk management rules

Theory and practice of risk management has developed a number of GENERAL RULES, based on

which is the choice of a particular method and option of decision.

The main ones are:

• maximum winnings;

• optimal ratio of gain and risk;

• optimal probability of the result.

The rule of maximum winnings is that of the possible solutions that retain risk, choose the one that provides the maximum result (income, profit) when minimal and acceptable to the entrepreneur risk.

In practice, more profitable options are usually more risky. Then the rule of the optimal ratio of gain and magnitude of risk, the essence of which is used is that of all the options that provide acceptable risk for the entrepreneur, the one with the highest profit-loss (loss) ratio is selected.

The essence of the rule of optimal probability of the result is that of all options that provide a reasonable probability for the entrepreneur to get a positive the result, the one with the maximum payout is selected.

Guided by these rules, in some cases the entrepreneur can accept decisions to increase the degree of risk, if such an increase does not exceed acceptable for entrepreneur losses and provides a significant increase in profits.

Among the basic SPECIFIC RULES of risk management it is expedient to allocate the following:

1) you can not risk more than equity can allow;

2) it is necessary to think about the consequences of risk;

3) you can not risk the big for the sake of the small;

4) a positive decision is made only in the absence of doubt;

5) in case of doubt, negative decisions are made;

6) one cannot think that there is always only one solution, there are always others.

Implementing the first rule means that before making a risk decision

capital investment, the financial manager must:

1) determine the maximum possible amount of damage for this risk;

2) compare it with the amount of capital invested;

3) compare it with all its own financial resources and determine whether it will not

loss of this capital before the bankruptcy of the investor.

The amount of loss from capital investment may be equal to the amount of this capital, less than or

more than him. In direct investment, the amount of loss is usually equal to the amount of venture capital

capital.

4.2. The essence of the concept of risk, its economic nature.

economic risk is a complex and controversial economic category. Risk exists independently of us and our knowledge of it. The concept of risk reflects the actual existing phenomena and processes, most of which are probabilistic, ie the risk is objective in nature.

At the same time, the risk is associated with the need to choose certain alternatives to the decisions made, calculating the probabilities of their results. In addition, management entities perceive the same level of risk differently because of their individual traits, which are reflected in the concept of risk appetite. This is the subjective side of risk.

Thus, risk is an objective-subjective economic category [25].

The essence of economic risk is ambiguous. This is due to the complexity, multifaceted nature and insufficient study of this phenomenon.

Etymologically, the word "risk" in different languages is associated primarily with the presence of danger and uncertainty in various areas of management and socio-economic life. The term "risk" comes from the Greek words ridsikon , ridsa - rock, danger. In Italian risiko - danger, threat; risikare - to move among the rocks. In French - risque - threat, risk (literally - go around the rock).

Risk as an economic category arose at the dawn of civilization, when a person became aware of the possibility of adverse situations, cold, hunger and more. Thus, at the household level, the origin of risk is somehow related to the awareness of danger, possible losses, threats, unreliability, ignorance, uncertainty and so on.

Interpretation of the nature of risk is associated with the presence of two theories: classical and neoclassical.

Representatives of classical risk theory , J. Mill and N. W. Senior , in the study of entrepreneurial profit, distinguished in the structure of entrepreneurial income interest (as a share of invested capital), the salary of the entrepreneur and the risk fee. In classical risk theory, the latter is identified with the mathematical expectation of losses that may occur as a result of the chosen solution. That is, risk is defined as the loss of a particular decision.

The neoclassical theory of risk, introduced in the 1930s by economists A. Marshall and A. Pigou , suggests that an entrepreneur who works in conditions of uncertainty and whose profit is a random variable is guided by two criteria when concluding an agreement: the size of expected profit and the magnitude of its possible fluctuations. According to the neoclassical theory of risk, the behavior of the entrepreneur is due to the concept of marginal utility. This means that if there are several options for making a decision with the same expected profit, the entrepreneur will choose the option in which the fluctuations in profits are less, ie with lower risk.

Risk is the probability (threat) of loss of a person or organization of part of its resources, loss of income or the emergence of additional costs as a result of a certain production or financial policy.

Risk is the expenditure of effort, resources with an uncertain balance of gains and losses, the chance of success and failure. The risk is great if the chances are slim.

Economic risk is the activity of economic entities associated with overcoming uncertainty in the situation of inevitable choice, in the process of which there is an opportunity to assess the

likelihood of achieving the desired result, failure and deviation from the goal contained in the selected alternatives.

Economic risk is an objective-subjective economic category in the activities of economic entities, which is associated with overcoming uncertainty and conflict in a situation of inevitable choice. It reflects the degree (degree) of achievement of the expected result, failure and deviation from the goals, taking into account the influence of controlled and uncontrolled factors in the presence of direct and feedback on the object of management.

The latter definition reflects a systems approach to the risk category and the impact on the system of internal factors, competing systems and the supersystem as a whole. Controlled external factors are customers, suppliers, competition, government, the economy, and technology.

Economic risk is a specific characteristic in an economic situation in which the probability of unforeseen consequences (possible deviation from the goals, the desired result, the loss of part of the profits of the entrepreneur) is not excluded.

Uncertainty is an objective impossibility of obtaining absolute knowledge about the internal and external conditions of functioning of socio-economic systems, the ambiguity of their parameters.

The main negative consequences of the manifestation of risk factors are reduced income, increased costs, losses, losses, loss of profit. However, the main motivation for risky activities is the desire to make more profit than in the case of risk aversion.

The main elements of economic risk:

- the probability of achieving the desired result (luck);

- the probability of undesirable consequences (failures) in the choice of alternatives and their implementation;

- the probability of deviation from the goal.

The main characteristics of economic risk, economic nature, alternative choices, uncertainty of results, risk fluctuations, consistency, inconsistency.

The main features of the manifestation of risk in modern conditions of development:

- the acquisition of risk of a total, comprehensive nature through the close relationships between economic processes taking place in the economies of the world;

- growing need for individual decisions when solving risk situations and increasing the role of the individual in business;

- strengthening of market features of the environment of human activity, which causes uncertainty about obtaining the expected result;

- transformation of risk into a commodity through the development of the insurance system.

4.3. Causes, types, classification of risks.

An scientifically sound classification of risks is important for obtaining a comprehensive characterization. In the economic literature, namely textbooks and manuals on financial management, financial management and other risks are classified differently, which indicates the existence of different approaches to the creation of classification schemes. Also, some textbooks list different types of risks without specific features.

Of the above types of risk, identified by source, the most manageable and predictable is economic risk.

Economic risk is associated with doing business, and therefore in some textbooks it is also called entrepreneurial. In the general case, all business risks can be divided into:

marketing risks;

risks of changes in legislation;

insolvency risks;

risks of inflation.

Marketing risk is one of the key in market relations. It is due to the uncertainty of demand for products and threatens the very existence of the enterprise. Miscalculations in forecasting demand can be fatal, because:

the manufactured products will not be sold, and therefore, the assets invested in its production are not reimbursed at all or are reimbursed only partially (for example, by selling products at prices below the actual cost);

profit from the sale of products for which there is a real demand will be lost.

The risk of price changes is no less dangerous. However, if the company's losses from the lack of demand for products can be blamed entirely on the company itself, the losses from price fluctuations are often associated with objective and unpredictable processes in the economy of a country or a number of countries. The risk of price changes may occur when:

an increase in the level of prices for basic components and services of other economic entities, while the level of prices for the company's products remains unchanged or decreases;

lower prices for the company's products at constant or rising prices for basic materials or raw materials.

Commercial risk is associated with possible complications in the implementation of financial and economic commercial transactions. It can include potential losses of the enterprise from dishonesty of contractors or insolvency of suppliers and buyers.

The risk of property loss is based on the fact that material losses of the enterprise can be caused by two reasons:

the force majeure of any natural disasters and man-made accidents;

violations in the process of production, operation of fixed assets, storage of property.

The risk of changes in legislation is similar in degree of impact to marketing risk. In the context of permanent legislation, this type of risk becomes especially important. New legislation, as well as numerous changes to existing ones, sometimes threaten the very existence of the company, and in most cases encourage the company to incur additional costs. It is also dangerous to constantly change the tax legislation - a traditional factor in increasing the costs of the enterprise.

The risk of insolvency is associated with the inability to quickly make payments. In the course of activity of any enterprise cases of temporary absence of highly liquid assets (for example, money) in necessary quantity are possible. At the very least, this can lead to a loss of time, at most - to incur additional costs (for example, due to a temporary lack of funds may be lost profitable contract with the supplier or there is a need to obtain loans).

The risk of inflation is associated with the depreciation of enterprise assets and in modern conditions accompanies any enterprise.

There are other types of risks, among which are the risks associated with criminogenic market regulation; risk of forgery of financial documentation, etc.

The reasons for possible negative financial results of the enterprise arise at three levels - operational, investment and financial. At these levels, operational, investment and financial risks arise, respectively. Aggregate (economic or business) risk is calculated as the total amount of risk for all activities. The level of aggregate risk of the enterprise is influenced by many factors.

Operational risks may result in losses from the enterprise's core business. They are the result of miscalculations in production, supply and sales policy.

Investment risk should be understood as the probability of financial losses in the process of investment activities of the enterprise.

There are two main types of investment risks:

financial investment risk (securities market risks);

real investment risk (project risks).

In addition, investment risks can be classified according to the level of assessment, causes, types of losses.

This risk is divided into:

national;

branch;

enterprises;

financial condition of an individual investor, etc.

National, or general economic, investment risk is associated with the political and economic situation in the country in which the issuing company operates. This type of risk is determined by the business climate created in the country, region.

Sectoral risk is assessed in the course of an industrial analysis, the results of which lead to a conclusion about the risk borne by the investor by investing their funds in enterprises engaged in this activity.

Investment risk at the enterprise level is assessed in the export analysis of the financial condition of the enterprise-issuer of securities by:

assessment of the scale and nature of the enterprise;

determination of the main activity of the enterprise, the direction of diversification, production, sales, costs and profits and trends in these indicators over time;

analysis of the level of production and management of the enterprise, its reputation;

calculation of the main financial ratios and formulation of the conclusion on the financial condition of the enterprise.

The risk associated with the individual financial condition of the investor of the enterprise is analyzed, as a rule, in two positions:

the rights granted to the investor - the level of dividends, the frequency of payments, the right to vote in resolving the most important issues of the strategy, the priority of the investor's requirements in comparison with the owners of other securities of the enterprise;

market position of this stock - its popularity, volume of issue, additional and subsequent issues, the history of market turnover.

The results of a comprehensive analysis lead to the conclusion that the investment attractiveness of this type of investment in comparison with alternatives from the standpoint of sectoral, intra - firm and individual risk of the investor. Since such an analysis requires significant time, it is not always performed, but only when solving strategic investment objectives (for example, when buying the right to control an open joint stock company, rating).

According to the type of losses, investment risks can be divided into:

risks of lost profits - risks of indirect financial loss (unearned profit) as a result of failure to take any action;

risks of reduced profitability that may arise as a result of reduced interest rates and dividends on portfolio investments;

risks of direct financial losses - pose a threat of total or partial loss of invested capital as a result of incorrect choice of capital investment.

The level of this risk is influenced by such factors as liquidity, profitability, composition, structure and other parameters of the investment portfolio. In foreign economic literature, operational and investment risks are often understood as business risks. The main tools for reducing the level of business risk are the diversification of investments, production and product range.

Risks that accompany the financial activities of the entity are allocated to a special group - financial risks, which are characterized by the probability of adverse financial consequences in the form of loss of income, capital or liquidity. Financial risks arise in connection with the movement of financial flows and are manifested mainly in the markets of financial resources.

In a broad sense, financial risks are most often associated with operational, investment and capital structure risks; in the narrow - with risks, the source of which is the financial activities of the enterprise, which changes the composition and structure of capital (liabilities) of the enterprise.

The essence of financial risks should be considered through the prism of the existence of two events: A and B.

Thus, financial risks belong to the group of speculative risks, the realization of which can result in both losses and gains.

Thus, operational and investment risks characterize the risk of losses on invested capital, which affects the investor.

Financial risk is also the risk that an entity that has raised financial resources will be unable to repay its due obligations in a timely manner, which could result in bankruptcy.

In practice, these risks are closely intertwined and represent a complex set of causal relationships . This nature of risks forms the approach according to which financial risks include not only those risks arising from financial activities, but also operational and investment risks. Therefore, the term "financial risk" means the total risk of the enterprise. Consequently, financial risks play the most important role in the overall portfolio of business risks. However, when studying the economic nature of risks should take into account the sources of their origin - operational, investment or financial activities of the enterprise, as well as their extraordinary mobility.

The growth of the degree of influence of financial risks on the results of financial activities of the enterprise and in general on the results of production and economic activities is associated with rapid changes in the economic situation and financial market, expanding financial relations, the emergence of new financial technologies, financial instruments and other factors .

Financial risks are objective in nature due to the uncertainty of the external environment in relation to the enterprise. The external environment includes objective economic, social and political conditions under which the company operates and to the dynamics of changes which it is forced to adapt.

The root causes of their occurrence are in the plane of capital structure. After all, financial risk is due to the irrational ratio of own and borrowed funds. A large share of borrowed funds in the capital of the enterprise often reduces their effectiveness. This is due to the significant cost of servicing loans, which may outweigh the benefits of attracting them. Such risks are sometimes called capital structure risks: if the capital structure is unsatisfactory, there is a risk that the company will raise funds at a risky rate and eventually become insolvent and, as a result, go bankrupt.

If possible, the risks are divided into:

systematic;

unsystematic.

Systematic (or market) risk inherent in all participants in financial activities and all types of financial transactions. It arises when changing certain stages of economic development of the country, changing the state of the financial market, in other similar cases, which the company in the process of its financial activities can not influence. This group of risks may include inflation risk, interest rate risk, currency risk, tax risk and, in part, investment risk (when macroeconomic investment conditions change).

Unsystematic (or specific risk) is inherent in certain areas of financial activities and the nature of financial transactions of a particular enterprise. It can be associated with unskilled financial

management, inefficient asset and capital structure, excessive propensity for risky (“aggressive”) high-profit financial transactions, underestimation of business partners and other similar factors, the negative consequences of which are largely , can be prevented by effective financial risk management.

The division of financial risks into systematic and non-systematic is one of the important prerequisites for the theory of risk management ("risk management" - IA Blank), which is widely used in financial (especially investment) activities of the enterprise.

According to the level of financial losses, the risks are divided into:

admissible;

critical;

catastrophic (or unacceptable).

Permissible financial risk is the threat of total or partial loss of profit from the implementation of a financial project or from the financial activities of the enterprise as a whole. In this case, losses are possible, but their size is less than the expected profit. Loss of profits from one, two or more transactions is acceptable, as it may be covered by a positive result from other transactions. Thus, this type of financial activity or a specific financial agreement, despite the probability of risk, retains its economic feasibility.

The next level of risk, more threatening than acceptable, is critical risk. This type of financial risk is associated with the threat of losses in the amount of costs incurred for the implementation of a particular financial agreement or type of financial activity. In this case, the critical risk of the first degree is associated with the threat of zero income, but in reimbursement of material costs incurred by the enterprise. Thus, the consequences of critical risk are more significant. The company reduces the scale of its activities, loses working capital and more. The critical risk of the second degree is associated with the possibility of losses in the amount of full costs. That is, possible losses of planned revenue and the company is forced to recoup costs from other sources.

Catastrophic risk is characterized by the fact that financial losses are determined by partial or complete loss of property. This type of risk usually leads to the bankruptcy of the enterprise, because in this case it is possible to lose not only all the funds invested in a particular type of financial activity or a particular financial agreement, but also the property of the enterprise. After all, in the event of a catastrophic financial risk, the company has to repay loans at its own expense.

According to the sphere of origin, financial risks are divided into:

external;

internal.

The source of the first risks is the external environment, so this risk does not depend on the activities of the enterprise. It cannot influence external financial risks, but it can anticipate and take them into account in its activities. External financial risks arise when changing certain stages of the economic cycle, changing financial market conditions, as a result of unforeseen changes in legislation in the financial activities of the enterprise, as a result of unstable political situation and in some similar cases that the enterprise can not influence . External risks are inherent in all participants in financial activities and all types of financial transactions. This group of financial risks includes inflation, currency, interest rate and other risks.

Internal financial risks are risks that depend on the activities of the enterprise and may be due to:

unqualified financial management of the enterprise;

inefficient asset structure;

excessive management commitment to risky operations;

incorrect assessment of the financial and economic condition of partners;

unstable financial position of the enterprise and other similar factors.

The negative consequences of internal financial risks are eliminated through effective management, ie the reduction of the overall level of financial risks is achieved by reducing internal risks.

The next feature of the classification of financial risks is the duration of exposure. According to this feature, there are two risk groups:

constant financial risk;

temporary financial risk.

Constant financial risk is characteristic of the entire period of a financial transaction or financial activity and is associated with the action of fixed factors. Thus, permanent risks include those risks that continuously threaten the activities of the enterprise in a given geographical area or in a particular sector of the economy. This group of financial risks includes currency and interest rate risks.

Temporary financial risk arises periodically and occurs only at certain stages of a financial transaction or financial activity. Temporary financial risks, in turn, can be divided into short-term and long-term risks. Short-term risks include risks that may arise over a period of time, such as credit and investment risk. The duration of possible long-term risks is difficult to reliably assess, for example, inflation risk.

According to the possibilities of prediction, financial risks are divided into two groups:

projected;

unpredictable.

Projected financial risks are risks that arise as a result of cyclical economic development, changes in financial market conditions, anticipated development of competition, and so on. However, the predictability of financial risks is relative - if the occurrence of an event can be predicted with 100% probability, it is impossible to talk about risk in this case, as it excludes the event under consideration from the risk category.

According to the possible consequences, financial risks are divided into:

risks as a result of which the company suffers economic losses, ie in the event of such risks, the financial consequences can only be negative (loss of income or capital of the company);

risks, as a result of which the company will not receive a certain amount of income for which it expected, ie, in this case, it is a loss of profit or lost profits. These risks characterize the situation when the company due to objective and subjective reasons can not carry out the planned financial transaction;

risks, as a result of which the company can count on both additional income and economic losses. Most often, these risks are characteristic of speculative financial transactions, but they may arise

in other situations, such as the implementation of a real investment project, the profitability of which at the stage of operation may be both above and below the expected level.

According to the object of financial risks are divided into:

risks of certain financial transactions carried out by the enterprise;

risks of different types of financial activities;

risks of general financial activity.

The risks of a single financial transaction in the complex characterize all the financial risks that an enterprise may encounter in carrying out any financial transaction.

Risks of various types of financial activities are all financial risks that may arise in the enterprise during the implementation of any type of financial activity. For example, the investment activity of an enterprise is characterized by a portfolio of various investment risks.

Risks of general financial activity include a set of various financial risks that may arise in the implementation of financial activities of the enterprise. These risks depend on the legal form, capital and asset structure, and other factors. For example, one of the reasons for the risk of reducing the financial stability of the enterprise is the imperfection of the capital structure, resulting in an imbalance of positive (input) and negative (output) cash flows of the enterprise.

According to the possibilities of further classification there are:

simple financial risks;

complex financial risks.

Simple financial risks are risks that cannot be divided into separate subspecies. For example, inflation risk, which is not subject to further classification.

Complex financial risks are risks that include a complex of its various subspecies. This group of financial risks includes investment risk, which is further classified into many subspecies.

According to the causes, the risk is divided into the following types.

Socio-legal - occurs when the instability of the "rules of the game" in the stock market - taxation, political situation, legislative guarantees and more.

Inflationary - the risk that inflation will outpace the growth of investment income. Inflation risk is a type of financial risk due to the possibility of depreciation of the real value of capital (in the form of financial assets of the firm), as well as expected income and profit of the firm from financial transactions or operations in connection with inflation. This type of risk is permanent and accompanies all financial operations of the enterprise in an inflationary economy. Thus, inflation risk is allocated as an independent type of financial risk only in an inflationary economy.

One of the methods of minimizing inflation risk is the inclusion of the amount of inflation premium in the estimated nominal income from financial transactions. In cases where forecasting inflation is difficult, the amount of real income from a financial transaction can be converted in advance into one of the stable convertible currencies with a reverse conversion into the national currency at the current exchange rate at the time of settlement of the financial transaction.

Market risk arises as a result of a possible decline in demand for this type of securities, which is the object of investment.

Operational risk - the risk of loss due to failure of information systems or computer technology. Operational currency risk arises in enterprises during such a business transaction, the specifics of which determine the payment or receipt of funds in foreign currency not at the time of the transaction, but after some time. Operational currency risk, because it reflects the impact of changes in exchange rates on the future flow of payments, affects the future profitability of the enterprise. This risk may lead to a decrease in the actual amount of revenue compared to previous calculations.

Functional risk is related to errors made in the formation and management of the securities portfolio.

Selective risk - the risk of incorrect choice of capital investments.

Liquidity risk arises when it is impossible to release invested funds without losses.

Credit investment risk exists where borrowed investments are made. Its meaning is that the borrower-investor will not be able to repay the principal debt and / or interest due to lack of liquid funds in the accounts until the debt is repaid or due to insufficient project efficiency.

Credit risk is the probability that the parties to the contract will be unable to meet their contractual obligations, in whole or in part. There are two types of credit risk:

trade credit risk;

bank credit risk.

Trade credit risk arises in the financial activities of the enterprise in the case of providing commodity (commercial) or consumer credit to customers. Bank credit risk is the possibility of non-repayment of the loan and interest on it. The level of credit risk increases with the amount of the loan and the term for which it is taken. Credit risk is maintained throughout the lending period and is measured by the duration of the loan. The potential loss on any credit risk is the full amount of the debt, and the actual loss may be less than that amount.

Credit risk can be caused by the following reasons:

decline of the industry, reduction of demand for products manufactured by the enterprise;

non-fulfillment of contractual relations by the company's partners;

transformation of enterprise assets;

force majeure.

Tax risk should be understood as the probability of losses that may be incurred by the firm as a result of changes in tax laws or as a result of errors made by the firm in calculating tax payments. Thus, tax risk belongs to both the group of external financial risks and the group of internal risks. Tax risk includes:

the likelihood of additional contributions to the budget as a result of unplanned increases in tax rates;

the probability of losses as a result of the tax service's decisions that reduce tax benefits, ie early cancellation of tax benefits;

significant increase in arrears of payments to the budget, which leads not only to penalties, but also the threat of suspension by the tax police of the enterprise, seizure of its accounts, seizure of documents related to economic activities, other things that may lead to liquidation;

the probability of losses due to tax errors caused by the fault of accounting staff.

Errors in tax calculations are associated with significant financial sanctions. At the same time, quite often the law punishes equally severely for accidental (technical) errors and intentional distortions.

Deposit risk - the probability of losses as a result of non-return of deposit deposits by banking institutions. This risk occurs relatively rarely and is usually associated with incorrect assessment and poor choice of the bank to carry out deposit operations of the enterprise. It should be noted that deposit risk is characteristic of both the developing economy and the developed market economy.

Currency risk is the risk of incurring losses as a result of adverse short-term or long-term fluctuations in exchange rates in international financial markets. Currency risk includes several main subtypes:

translation risk;

operational risk;

economic risk (direct and indirect).

Translational currency risk arises from the consolidation of the accounts of foreign subsidiaries with the financial statements of the parent companies of multinational corporations. This risk is of an accounting nature and is due to the need to account for assets and liabilities of the enterprise in different foreign currencies. Economic currency risk is the probability of a decrease in revenue or the possibility of making a profit due to changes in exchange rates. This type of currency risk for an enterprise is that the value of its assets and liabilities may increase or decrease due to future changes in currency risk.

Economic currency risk is long-term and is associated with the fact that the company incurs costs in one currency and receives income in another. As a result of any change in exchange rates, the financial condition of the enterprise may change.

There are two subtypes of economic currency risk:

direct economic risk - reduction of profit on future operations;

indirect economic risk - the loss of a certain part of price competition compared to foreign producers. This type of risk is especially harmful for companies representing countries with underdeveloped economies.

The next type of financial risk is interest rate risk. This type of risk arises due to unforeseen changes in both deposit and credit interest rates in the financial market. Interest rate risk leads to changes in the cost of interest or income on investments and means changes in the rate of return on equity and invested capital compared to expected rates of return.

The cause of interest rate risk is a change in the financial market of enterprises under the influence of the external business environment, increase or decrease in the supply of free monetary resources, government regulation of the economy and other factors.

First of all, banks and investment companies face interest rate risk. However, this risk is also inherent in enterprises that use bank loans to finance their activities, as well as invest temporarily free cash in assets that generate interest income (government securities, corporate bonds, certificates of deposit).

A significant amount of loans and investments of the company are carried out on a floating interest rate. In this case, the interest payable or receivable during the term of the contract is periodically reviewed and adjusted to the current market rate.

Business risk is considered separately. Business risk is one of the types of financial risks, characteristic, first of all, for joint-stock companies. It is the inability of the company to maintain the profitability of the share at a constant level. Business risk usually arises when the production and economic activities of the enterprise are less successful than planned.

According to the possibilities of insurance, financial risks are divided into those that are subject to and those that are not subject to insurance. Insured risk is a probable event or set of events in the event of which insurance is provided. Such insurance has two forms: self-insurance or external. Self-insurance involves the creation of an appropriate reserve fund at the enterprise. External insurance of financial risks involves the existence of liabilities of the insurer for insurance payments in the amount of full or partial compensation for loss of income and possibly additional costs caused by the following events:

cessation of production or reduction of output as a result of certain events;

bankruptcy;

contingencies;

non-performance (improper performance) of contractual obligations by the counterparty of the insured person who is a creditor in accordance with the agreement;

other events.

An enterprise can partially or completely transfer the risk to other economic entities and ensure its security by incurring costs in the form of insurance premiums.

There is a group of financial risks that companies do not insure, but often these risks are potential sources of additional income for the entity. Losses as a result of the realization of risk that is not subject to insurance are reimbursed only at the expense of the company's own funds.

Lecture 5. Evaluation of the effectiveness of innovation activities of organizations.

5.1. The effectiveness of innovation. Selection methods, evaluation criteria, efficiency.

5.2. Substantiation of economic efficiency of the innovative project.

5.1. The effectiveness of innovation. Selection methods, evaluation criteria, efficiency.

Quantitative evaluation of innovative projects is very difficult. The biggest difficulty is that the innovation unit often conducts research that cannot be directly related to market demand and profit forecast. Most are participating in programs aimed at improving existing processes or products. In this case, consider successful and unsuccessful programs. The following results can be considered successful: payment of the organization for the use of a patent, license; change in the chain or cost of an improved process or product; increase in profits due to the introduction of innovation; improving the organizational structure of management, methods of work, distribution and delegation of powers of individual specialists, cooperation, specialization, decentralization. Another difficulty in determining the effectiveness of an innovation project is that a calendar year is a fairly short period of time for a detailed assessment of the results of innovation. Given the specifics of design activities, scientists recommend analyzing the result at intervals of about five years. Engineering expertise determines the technical implementation of the ideas underlying the project. The decision on funding is preceded by a professional analysis of the feasibility of the potential benefits of the project. When it comes to a different from the previous direction of experience and activities of the enterprise, realism, feasibility are reduced.

Thus, there is a case when in the process of conversion the aircraft company has developed a project for the production of trolleybuses, with no experience in designing passenger electric vehicles. As a result, the model was rejected and the company suffered losses.

For an objective evaluation of the project, it is recommended to conduct an examination according to the following principles:

- - the presence of an independent group of researchers who act as arbitrators in controversial situations based on the results of the examination;
- - conducting preliminary forecasting and planning of costs in the medium term to determine the approximate efficiency;
- - methods of control should be interrelated with the prospects for the development of management of scientific and technical policy at the state level.

During the examination of projects, it is necessary to determine the potential impact of research or development results on the social, economic and environmental environment.

Examination involves not only quantitative but also qualitative evaluation of projects. When making decisions, take into account the assessments expressed by each member of the expert group. Experts have the right to request any information about the project. A highly qualified representative of the examination customer can be involved in each expert group. Expert assessment is given on the basis of analysis of the scientific content of the project and the scientific potential of the author (or author's team). The analysis of the scientific content of the project takes into account:

- - clarity of the project idea (clear, vague);
- - clarity of definition of the purpose and methods of research (clearly, indistinctly);
- - qualitative characteristics of the project (fundamental, interdisciplinary or systemic, applied nature);

- - scientific work (significant scientific and methodological work to solve the problem formulated in the project; publications on a given topic; scientific and methodological study of the problem);
- - novelty of the problem (the author first formulated and scientifically substantiated the research problem; proposed original approaches to solving the problem; the research problem formulated in the project is known to science and the author did not propose original approaches to solving the problem).

The scientific potential of the author's team is assessed taking into account the analysis of the scientific content of the project (the author / participants can perform the declared work; the expert is not sure about the ability to perform the declared work).

Therefore, the expert should not only give a description of the project, but also assess its relevance for a particular field of knowledge; whether the project is one of the priority areas of research; the novelty of the problem; project development prospects; qualitative composition of participants, as well as justify the above evaluation system. For experimental and laboratory research, the examination provides answers to the following questions:

- - Are research programs prepared?
- - Are questionnaires prepared for the survey?
- - Has a pilot study been conducted?

There are three levels of expertise. The first level - preliminary consideration of the project and solving the following tasks: selection of projects to participate in the examination of the second level; streamlining reasoned conclusions on rejected projects; identification of experts from each project that passed the individual (second) level of expertise. Formalization of results at the second level of examination is carried out on a rating basis. At the third level, a conclusion is given on the project (adjustments can be made to the overall rating of the project, funding decisions are made). The individual rating of the project is calculated by the formula:

$$R= r1 + r2, \quad (8.1)$$

where R is the overall rating of the project; r1, r2 - coefficients that take into account, respectively, the scientific value of the project and the reality of the project in a given time.

The coefficient r1 determines the possibility of providing new principal results during the project implementation; significant progress within this direction; influence on progress in this or a related scientific field. The coefficient r2 takes into account the scientific level of the leader and the potential of the team led by him; scientific work and publications on the topic; information, laboratory and material support of the project; correct distribution of the task by status, results and deadlines.

5.2. Substantiation of economic efficiency of the innovative project.

In the modern economic literature, "costs" are sometimes replaced by the terms "costs", "expenses". In financial management, management and financial accounting, this is acceptable, as each of these concepts has a separate meaning. However, in the project analysis for the analyst, replacing the concept of "costs" with the term "costs" is not fundamentally important. Therefore, in the future we will consider these terms as synonyms. }

That is, you need to evaluate all the results of the project and determine whether the benefits outweigh the costs of its implementation. Basic methods of evaluation and analysis: expert,

analogies, structural evolutionary comparisons. The expert method is a preliminary study of the current situation of the designed process (eg, production technology). Then conduct a diagnostic study with the place of study and compare the actual characteristics with scientifically recommended, identify shortcomings, reserves for improvement. At the final stage, the key parameters of the current system are compared with the projected ones.

The method of analogies involves the choice of a project that has proven itself in practice in similar operating conditions. Typical projects make implementation cheaper, but it is first necessary to analyze and compare the "pasture" conditions with the current ones.

The method of structural evolutionary comparisons is based on the assessment of the current state of the system and expected (predicted) changes in goals, objectives, demand, production and economic results, and so on. In the process of research, an analysis is carried out, the results of which should answer the question of whether a particular project meets the prospects for development and, therefore, choose the most appropriate.

If the purpose of the analysis is to establish the amount of excess of additional benefits from the project over the additional costs necessary for its implementation, it is necessary to determine the method of calculation.

The model of estimation of additional profits is based on establishment of quantity and cost of additional benefits:

i(8.2)

de Pdod. - additional income from project implementation; Vdod. - the cost of additional benefits received through the project; n - the number of additional benefits; and - an additional benefit.

The model of estimation of additional costs is based on definition of quantity and cost of necessary additional resources:

de Zdod. - additional costs for project implementation; Rdod.j - the cost of additional resources involved in the project; t - the number of additional resources involved; in - an additional resource.

Determining costs and benefits should be done in the context of each year of the project.

There are obvious and non-obvious benefits and costs. Obvious are the material benefits (costs due to reduction (increase) of costs or additional income (costs), the value of which is usually obvious, which allows you to easily determine their financial value. they are based on the assessment of benefits and costs taking into account market chains.

Unobvious benefits (costs) include incidental benefits (costs) that arise during project implementation. They are usually related to the economic or social consequences of the project and are indirect. Unobvious benefits (costs) are necessarily reflected in the economic evaluation of the project, when its viability is assessed from the standpoint of society as a whole. To assess the benefits and costs of economic analysis, it is desirable to use the opportunity cost of resources and products.

The method of estimating non-obvious benefits and costs involves the use of the following techniques:

- identifying the chain of goods and services of related markets in which these non-obvious benefits and costs are quantified. For example, housing market chains can be used to assess the inconvenience caused by noise and highway pollution;

- indirect assessment, or assessment of a chain of hypothetical goods, which is a survey of people for whom the project is intended as to whether they would be willing to pay (for benefit or elimination of costs) or receive compensation (for waiver of benefits or costs) if there was a market for such non-obvious benefits or costs;

- maximum - minimum value - determination of the quantitative value of non-obvious costs, which benefits should exceed. For example, you can estimate the cost of cleaning polluted water and then decide whether the benefits outweigh the cost.

Unobvious benefits and costs often accompany projects with external effects. Such incidental costs are estimated by: the amount of minimum compensation they would need to restore the previous level of well-being without this external effect; the maximum amount they are willing to pay to stop this external effect. The choice of such an approach depends on whether the company has the right to pollute water at all or to a certain level, whether residents have the absolute right to use completely unpolluted water, and whether there is a regulatory framework to compensate the population.

One of the key provisions of economic analysis is the concept of opportunity value.

Opportunity arises when there are limited resources for an object or activity that is valuable to someone. Alternative value is the lost benefit of using limited resources to achieve one goal instead of another, the best of the remaining options.

Efficiency is always determined by comparison with a particular option of resources used.

Efficiency (Latin effectivus - performance, action) - is the ability of the system to provide results.

;

Effect = results - costs

Effect - an absolute indicator - the result of activities, such as the amount of profit, the amount of gross income, output in kind, and, accordingly, growth.

There are two main approaches to solving the problem of quantifying the effectiveness of an investment project (Fig. 8.1): simple static valuation methods, discounting methods to take into account future payments and their contribution to total profits.

When considering the financial aspect of project analysis, the main goal is to maximize the difference between income and expenses, ie profit. Each cost reduces this difference, so the price paid for certain costs can be a means of estimating the opportunity cost. Note that the evaluation of financial aspects of the effectiveness of innovative projects is carried out according to the same methods as for investment projects (Fig. 8.2).

Increasing the physical volume of production is the most typical type of material benefits, the definition of which is based on additional cash inflows through the project.

In some cases, the benefits of projects may be to improve product quality, which can largely meet the growing needs of buyers of this product, and thus increase sales. The benefits of the project also include changes:

- qualification of employees, which allows to improve the quality of products, avoid the risk of shortages, to achieve long-term balance;

- at the time of implementation. This is, for example, due to the construction of specialized warehouses, which allows you to sell products at the best prices for it (selling grain not during the harvest, but at the end of the year, when the price rises);

- places of sale. This type of benefit is most associated with projects in the field of sales, which involves the delivery of goods directly to the consumer;

- type of product, such as sorting and processing.

When conducting a project analysis, individual costs are often more important than all others. Some, by their very nature, require more careful analysts.

Let's look at some costs and their classification features that will help you make the only right decision when evaluating projects. The most common classification features of costs are:

- - the ability to reflect in the financial statements (accounting and economic);
- - the degree of dynamics of costs depending on the increase or decrease in production (fixed, variable);
- - period of costs (long-term, short-term);
- - method of allocating costs per unit of output (average, marginal);
- - origin of costs (operational, financial);
- - the degree of coverage of real value;
- - possibility of distribution.

Modern accounting methods allow to reflect in accounting documents only the cost of used resources that are not owned by the company. These costs are included in the cost of manufactured products, and are usually regulated by the relevant legal framework. However, quite often a company that has its own resources and uses them, is not able to reflect these resources in its accounting costs. Practice has confirmed the need to calculate for the entrepreneur not only accounting costs (obvious), which are incurred when paying for resources to an external supplier, but also non-obvious costs that arise when the company uses its own resources. The analyst who decides on the feasibility of the project, the masses are guided by the amount of economic costs, which include both accounting and non-obvious costs, which reflects the cost of resources,

Economic efficiency characterizes the relative increase in the effectiveness of the enterprise compared to the established base through the comparison of results and costs in value terms.

Social efficiency is manifested by the development of a certain system of social groups in society as a result of the project.

Environmental efficiency is to prevent damage to the natural environment, as well as to save costs for the reproduction of certain types of resources through their more rational use, comprehensive processing, waste disposal. Quite often the cost of nature protection increases the cost of the project.

Organizational efficiency is associated with improving the production process, increasing the efficiency of management, speed of design, implementation of management decisions and more. its growth is associated with specialization, integration, concentration of economic processes, distribution of economic and legal rights, responsibilities, responsibilities between the structural elements of the system.

Scientific and technical efficiency is the growth of scientific and technical level of production, trade and technological processes and is characterized by the level of progress of the equipment and technology used.

Commercial efficiency takes into account the financial consequences of the project for its direct participants.

Budget efficiency reflects the financial implications of the project for a rational, local budget and possibly for the general state.

Nationwide efficiency - takes into account the costs and results associated with the project, which go beyond the direct financial interests of project participants, for regions, industries and more.

Among the indicators of quantitative evaluation of the project by partial c:

- 1. In cases where the project is to change the technology, equipment:
- 1.1. P = P1 -P2,

where P is the increase in the amount of profit, P1, P2 - the amount of profit before and after implemented (estimated).

- 1.2. Payback period of investments (the ratio of the amount of investment to the arithmetic mean profit as a result of the project).
- 1.3. Cost savings.
- 2. When the project is to introduce a new product to the market:
- 2.1. T / o = T01 - T02,

where T / o - increase in turnover, T01, T02 - turnover of the past period and after project implementation (forecast).

- 2.2. Market share of the enterprise, a specific group of goods among competitors. The method of its calculation has two main options:

o - share in total sales for the year;

o - share in total production.

In order to select projects on several unrelated indicators, the method of multi-criteria selection is used. It is based on defining the main criterion, providing other criteria for the restriction and analyzing the allowable melee of absolute effectiveness for each of the restrictions.

Which of the indicators should be chosen as the main one, and the others should be included in the restrictions? At first glance, when evaluating projects and enterprises, priority should be given to economic indicators, but this decision is not always correct.

Thus, only the projects located in the IV quarter fully meet both economic and environmental criteria. These projects are selected for further detailed economic analysis.

The future financial results of the investment project depend on the amount of investment, the expected amount of sales, the volume of products and services provided, as well as the future value of products, capital, energy, equipment, materials, finished products. That is why an important point in the evaluation of investment projects with medium and long-term forecasting of prices and demand for products (goods). Comprehensive assessment of the innovative activity of the enterprise is based on the definition of scientific-informational and technical levels of the enterprise. To do this, you can apply two criteria of efficiency: the scientific level of the enterprise (science-intensive production) and the competitiveness of its development in the form of the following indicators:

a) the coefficient of knowledge intensity of production (K):

where Vn - the amount of costs for innovation (science); Ba - the total amount of production costs;

b) the coefficient of use of own developments (Kvl.r.):

de Nvl.vpr. - number of implemented own developments; Nvl.zag. - total number of own developments;

c) the coefficient of use of purchased developments (Kpr.r.):

de Npr.npr. - the number of implemented acquired developments; Ex. - total number of acquired developments;

d) the ratio of own and acquired developments (K):

According to this indicator, we can conclude about the pace of research at the enterprise. It provides an assessment of the level of activity in innovation on a scale that reflects three levels: low <1; average ≈ 1; high> 1.

To analyze the technical level of security of the enterprise, we propose to use the following indicators:

a) the coefficient of product renewal (Kon.pr.):

where Qnov - the volume of production; Qzag. - total output of marketable products;

b) technology update rate (Con.t.):

de Nn.tp. - number of introduced new technological processes; Nzag.tp. - the total number of technological processes;

c) the share of competitive products of the enterprise (Qk):

where Qskl - illiquid products that are overtime in stock.

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