Lecture 1

1. Definition of "crisis", "risks", "uncertainty".

2. Classification of risks. The impact of risks on the activities of society, business and the environment.

3. Risk management as a tool for ensuring the sustainable functioning of an enterprise in conditions of uncertainty.

1. Definition of the terms of “risk”, “uncertainty”.

Crises and the cyclical nature of their manifestation are characteristic of both nature and modern society. In general, a crisis in domestic science is called a complex acute state, a sharp break or decline. However, foreign scientists Y. Rosenthal and B. Pidzhnenburg define the concept of “crisis” somewhat more broadly: “Crisis is called a situation marked by high danger, a state of uncertainty, a sense of urgency”.

At the same time, L. Barton[1] considers a crisis to be “a large-scale, unforeseen event that leads to potentially negative results. This event and its consequences can cause serious damage to the entire organization: employees, products, communications, finances and reputation”.

In turn, P. S. Green understands a crisis as a loss of control over the situation. The scientist suggests that “the most important task of crisis management is to limit the size of potential damage as much as possible in the shortest possible period”.

Usually, crisis phenomena are classified according to the following features:

– *by place of occurrence*: **internal** – crises that arise and manifest themselves directly in organizations and enterprises; **external** – crises that arise and manifest themselves in the external environment in relation to organizations and enterprises;

– *by level of economic manifestation*: **microeconomic** – characteristic of individual organizations and enterprises; **mesoeconomic** – manifest themselves in a certain industry; **macroeconomic** – arise within a certain country; **international** – are formed outside the country and capture several or most countries of the world;

[1] Гук О. Синергетична модель дослідження публічного управління. Актуальні проблеми державного управління. 2018. Вип. 1. С. 24–29

– *by scope*: **individual** – crises that affect the activities of specialized organizations and enterprises; **group** – crises that affect the activities of a certain group of organizations and enterprises;

– *by nature of occurrence*: **random** – crises that arise spontaneously under the influence of unforeseen circumstances; **regular** – crises that are a consequence of certain natural and/or social laws of development; **cyclical** – crises that have the ability to constantly repeat;

– *by sources of origin*: **natural** – arise regardless of human activity and social processes, depend on force majeure circumstances; **artificial** – specially created for a specific purpose. The origin of crisis phenomena is the result of contradictions between the external and internal environment, which leads to the aggravation of an uncontrolled situation. Contradictions arise when in a certain environment, one way or another, heterogeneity arises, which is characterized by a gradient in one direction or another.

Theoretical analysis of all types of crises indicates their cyclical nature and stable interconnection. Since cycles are constantly repeating processes, based on the theory of the cyclical development of nature and society, it is possible to trace the processes of emergence, development and interconnection of both cyclical and crisis phenomena.

Over the past decades, the number of environmental crises has been increasing due to unreasonable human activity.

There are three directions of development of environmental cycles and crises. One of the most negative, but quite real, is a global ecological catastrophe, which can lead the biosphere to a new quasi-balance, covering human existence, and subsequently the problem of ecological (as well as social) cycles and crises will be solved forever or for millennia.

The second is when society stands on the verge of ecological catastrophe, sometimes plunging into the abyss of local ecological crises - due to deforestation, pollution of the seas, depletion of certain natural resources, rising ocean levels due to the melting of the North and South poles, Alpine glacier caps, etc. However, there are so many obstacles on this path, selfish interests of developed countries and civilizations, that more than one generation of people will be needed to successfully solve this global problem.

Today, the richest countries are the main consumers of natural resources and "donors" of pollutants. The ecological crisis is a natural consequence of the unresolved contradiction between the practice of consumerist attitude of society to

nature, which has been established in the history of civilization, and the ability of the biosphere to support a system of natural biochemical processes of self-renewal.

There are many components of the ecological crisis, including: depletion of ecological systems; degradation of the agricultural resource base; desertification (desert attack on fertile lands); deforestation; disappearance of many species of animals and plants; water and air pollution; excessive use of natural resources. Scientists believe that now there is the first wave of the ecological crisis, which affects mainly industrial countries and countries with economies in transition (former socialist), and if the crisis is not stopped, it will spread and deepen, which may lead to the degradation of society and the economy on a global scale and the disappearance of humanity in the near future.

Scientists have formed a list of ***reasons that caused the global ecological crisis***, namely:

– lack of political will of states to consistently, effectively implement activities related to environmental protection and rational use of nature;

– imperfect environmental legislation and legislation in the field of rational use of nature;

– defects in the organization of state environmental policy;

– dominance of economic interests and satisfaction of economic needs without taking into account the ecological capacity of ecosystems;

– predominance of commercial interests over general human interests;

– insufficient funding of environmental protection programs and measures;

– lack of competent specialists in the field of ecology and nature management;

– low level of ecological awareness, ecological knowledge, ecological culture;

– ecologically “barbaric”, nature-consumer concept of social development.

Possible ways to solve the environmental problems of humanity, according to V. M. Pisarenko, are as follows:

– creation of a new ecologically-oriented worldview of man;

– development, consistent and effective implementation of national and international environmental policy;

– development of modern environmental legislation;

– creation of a system of state management of nature management and environmental protection;

– ensuring optimal financing of activities in the field of ecology;

– ecological and educational activities, environmental education and training of environmental specialists.

There are many concepts of nature use and socio-economic progress of mankind, in particular:

– ***the concept of consumer (selfish) attitude to nature***, which prevails in all societies. The essence of the concept is that nature is perceived as a source of development of material production and creation of wealth of society. The natural result of these relations is degradation, depletion of nature;

– ***the concept of non-interference in nature*** is the opposite and can be observed only theoretically. Its followers note that nature develops according to certain laws and every human intervention leads to negative consequences. This theory is a manifestation of global thinking and part of the formation of a noosphere society. Supporters of the concept believe that human reason cannot be used to destroy living things, human attitude towards nature should be kind, reasonable. This doctrine has great potential, but has not yet been implemented in practice;

– ***the concept of limited economic development (population needs)***, which is based on the probability and inevitability of ecological collapse provided that modern civilizations are preserved and provides for an improvement in the situation under many conditions: reducing the consumption of natural resources, revising the birth rate policy, reducing the material needs of the population, humanity, etc.;

– ***the concept of sustainable development***, which is one of the most widespread, was presented by the UN International Commission on Environment and Development in 1987. Its main idea is that humanity should meet the needs of the present, and not endanger the existence and development of future generations by neglecting their needs. Successful development requires a policy that takes into account the environmental requirements of the environment. In its modern version, this concept sounds like the concept of environmentally safe, sustainable economic and social development and is gradually being applied in many highly developed countries.

It is possible to predict these negative phenomena provided that forecasting is the main factor in forming the strategy and tactics of further development of enterprises.

A promising direction for them is to reduce the anthropogenic load on the environment, that is, their energy saving - reducing energy consumption by increasing the energy efficiency of production. An effective energy saving policy

at both the macro and macro levels means finding optimal levers of influence on the economy in order to stimulate the implementation of energy-saving measures.

The activities of any business entities are associated with factors of uncertainty, that is, randomness, incomplete information, vagueness, etc. **Uncertainty** is closely related to risks.

There is no unambiguous interpretation of the concept of risk in the economic literature. Current legislation also does not define this concept. However, in the most general form, **risk** can be represented as uncertainty that leads to possible losses as a result of carrying out a certain activity. **Uncertainty** represents the objective impossibility of obtaining absolute knowledge about the objective and subjective factors of the functioning of the system, the ambiguity of its parameters.

Uncertainty and the associated risk are an integral part of the activities of any economic system. Despite the fact that risk leads to possible losses and failure to receive expected income, it is the driving force of the economic activity of any business entities. ***To ensure the sustainable development of business entities, it is necessary to effectively manage risks in conditions of uncertainty.***

Risk management in the general sense is a set of methods, measures, techniques aimed at predicting the occurrence of risk situations, in order to take measures to reduce or eliminate the negative consequences of such events. In the conditions of rapid development of globalization processes, internationalization of economies, innovative development of production, humanity is faced with new challenges, which can be conditionally divided into three groups: environmental, economic, social.

Priority challenges include: pollution of the world ocean, increased carbon emissions into the atmosphere, unemployment, social inequality, growth of public debt, inflation, etc. There is a formed relationship between these three groups of factors. When the economic component improves, the social component increases, but the environmental component worsens. And vice versa, when the economic component deteriorates, the social component worsens, but the environmental component improves. As a result, less developed agricultural countries have better environmental conservation indicators, while developed countries have high GDP, per capita income, social security, medicine, but worse environmental conservation indicators, etc. It is very difficult for a country, regardless of its level of development, to ensure a balance between these three groups of factors. To eliminate such an imbalance, the concept of sustainable development was developed.

All definitions of the concept of "sustainable development" focus on the anti-risk nature of the concept, emphasizing that sustainable development is oriented towards minimizing risks and threats in three components – social, environmental and economic, however, such a nature is not reflected in the definitions themselves. In addition, insufficient attention is paid to the manageability of such development. Taking this into account, we propose to consider sustainable development (SD) as an approach to managing the development of economic systems at the micro, macro and global levels, which involves minimizing current and future risks, is carried out on the basis of a systemic approach and ensures balance in the positive dynamics of the three components – social, economic and environmental.

Based on the above, we can make an assumption about the connection between sustainable development management and risk management. The concept of sustainable development involves preventing threats and overcoming adverse consequences of human life, the occurrence of which is possible in the future. In turn, risk is an uncertainty, the manifestation of the consequences of which is possible in the future. That is, in our opinion, the implementation of the concept obviously involves managing development risks.

Sustainable development and risks are directly related concepts, since when the values of sustainable development indicators increase, risks and the probability of their occurrence decrease, and vice versa, when other components of sustainable development deteriorate, the probability of the occurrence of certain risks increases. Similarly, the concept works at the micro-level of the enterprise. Therefore, in our opinion, the model and the corresponding methodology for analyzing the sustainability of the enterprise should take into account the assessment of risk parameters[2].

The term **"risk"** comes from the Latin "risicari", which means "to dare". In practice, risk is understood as the possible danger of any adverse outcome, that is, obtaining a negative result from conducting a particular business transaction.

Risk management is the process of making and implementing management decisions aimed at reducing the likelihood of an adverse outcome and minimizing possible losses caused by its implementation.[3].

[2] *Кравченко М. О. МОДЕЛЬ АНАЛІЗУ СТАЛОГО РОЗВИТКУ ПІДПРИЄМСТВА З УРАХУВАННЯМ РИЗИКУ. ЕКОНОМІЧНИЙ ВІСНИК НТУУ «КПІ», 2020 DOI: https://doi.org/10.20535/2307-5651.17.2020.216368*

[3] URL: https://uk.wikipedia.org/wiki/Ризик_(значення)

2. Types of risks

Having studied different approaches to classifying risks, they can be combined into the following groups:

– by place of manifestation (by origin of the threat) – external, internal;

– by sphere of origin – production, commercial, financial, investment, environmental;

– by duration – short-term, medium-term, long-term;

– by degree of impact – permissible, critical, catastrophic;

– by insurance possibility – insured, uninsured.

You can also distinguish other groups of risks that will affect the risk management of a business entity. Of greater interest are the causes of risk, which include, first of all, external and internal factors presented in Table 1.

Table 1

External and internal factors that determine business risks[4]

Risks	External	Internal
Financial risks	Interest rate Currency rate Credit	Liquid assets Cash flow
Strategic risks	Competition Consumer Market Change Industry Changes	Research Intellectual Capital
Operational risks	Legislation Culture Composition of the Board of Directors	Accounting Recruitment Technology Raw material supply
Dangers	Contracts Suppliers Environment Natural Hazards	Commercial Service Personnel Property Products and Services

The above classification reflects the problem areas of the enterprise's activity, which may be associated with risks.

Sustainability risks can be divided into short-term (medium-term) and long-term risks. The first risks can manifest themselves in the period up to 3 years, the second - in the period from 3 to 10 years.

Short-term (medium-term) risks are associated primarily with an incorrect assessment of short-term (medium-term) factors of the development of the business entity (availability of raw materials for organizing production, etc.).

[4] Інтегрована звітність в контексті євроінтеграції України: сучасний стан, перспективи розвитку та запровадження: монографія / за заг. ред. Савченка Т.Г., Гриценко О.І. Суми : Вінніченко М.Д., 2018. 126 с.

Long-term risks are associated with long-term factors, which include conjunctural, technological, social, legal and environmental factors. These factors determine the directions of development of the country's economy and the associated risks at the level of the business entity (the risk of incorrect assessment of the development trend, forecast risk and the risk of failure to achieve the strategic development goals of the business entity).

Another area of consideration of strategic sustainability risks is the risks of spatial sustainability. These risks can be divided into two groups: business risks and regional risks. The first group of risks is related to the sphere of activity of business partners, which include banks and investment funds, as well as suppliers and buyers of the business entity. The second group consists of regional risks associated with the political and economic situation in the country.

An important aspect of the strategic sustainability of the enterprise is the identification of risks, which should ensure the identification of individual risks. Currently, a large number of risk identification methods have been developed, which are enshrined in risk management standards.

For successful operations in the future, applying risk management in your activities, it is necessary to make a compromise, that is, choose a strategy that will ensure the minimum gain in any combination of circumstances. This will help reduce the risk of making incorrect tactical and strategic decisions, but may lead to increased costs for environmental monitoring. In the most general form, risks can be divided into economic, political and legal, social, environmental and technogenic[5].

Economic risks are the result of economic actions caused by decisions on the production and consumption of goods, which leads to inefficient and irrational distribution and use of material and financial resources.

Political and legal risks are characterized by the use of political power to maintain ineffective forms of government. These risks are characterized by maintaining socio-political stability by restricting rights and freedoms, ensuring sustainable economic growth by means of non-economic coercion and irrational use of resources, a significant part of which is directed to supporting and preserving the political regime.

Social risks are risks caused by an increase in human needs and a decrease in the resource base to meet these needs. Under the influence of social risks, national, religious and labor conflicts increase. The nature of these risks is due to the

[5] Чертыковцев В.К. Управление рисками / В.К. Чертыковцев // Экономика, предпринимательство и право. – 2013. – № 2 (19). – С. 14-18.

ineffective and irrational use of creative abilities and an ineffective system of social protection of the population.

Environmental risks are risks associated with the results of economic activity and the impact on the biosphere, which lead to increased threats to the life and health of not only people, but also other objects of the natural world.

Technogenic risks are associated with errors and the location of production and social facilities in a specific territory, which pose a real threat to people's lives and health.

As a rule, risks arise as a result of the action of various factors that are sources of risk. In general, the source of risk is factors, phenomena, processes that cause uncertainty of results due to certain changes in the external and internal environment. Taking this into account, the source of risk can be divided into external and internal. External sources of risk include factors that are formed in the external environment, and the actions of which cannot be avoided. Among them are political, economic, social, environmental factors. Internal sources of risk include factors that arise in the middle of the system itself and directly affect its activities. The presence and activity of internal sources of risk depends significantly on the actions of the organization.

Risks have certain properties that must be taken into account when managing them. Risk management involves taking into account and using certain properties of risks. Thus, risks have certain properties, among which the most significant ones can be distinguished, such as:

– systematicity;
– integrity;
– dynamism;
– flexibility;
– complexity;
– manageability;
– diversity.

Such a property of risks as **systematicity** involves a comprehensive study of the entire set of risks as a single whole, identifying connections between them and studying possible consequences in the event of their occurrence. **Integrity**, as a property of risks, is characterized by conducting a general assessment of all possible risks and predicting the negative consequences of the occurrence of risks, taking into account the interaction between them.

Risks are characterized by **dynamism**, that is, the process of occurrence and formation of risks is constant in conditions of uncertainty.

Flexibility, as one of the properties of risks, is characterized by the ability of the entire risk management system to respond quickly to the emergence of new risks in the conditions of variability of the external and internal environment.

Complexity is one of the main properties of risks, since it is due to the large number of risks that constantly arise from various sources and the need to take into account their interrelationship and impact on each other and on risk management in general.

Risk manageability is characterized by the admissibility of changing the negative impact of risk within the framework of management actions.

Risks are by their nature characterized by diversity and depend on many factors that need to be taken into account when managing risks.

Table 2

Key sustainable development risks and measures to minimize them[6]

Risks	Description	Risk mitigation measures
Environmental risks	–The impact of the Group's activities on the environment, including air pollution, wastewater discharges and waste generation –Increased control over the Group's activities by local communities and regulatory authorities in the regions of presence –Implementation/strengthening of climate laws and regulations to accelerate the transition to a low-carbon economy	–Applying the precautionary principle and assessing potential environmental impacts when planning investment projects –Implementing technical measures to reduce emissions, monitoring compliance with regulatory requirements –Developing a long-term decarbonization roadmap with clear goals and technological objectives –Optimizing the corporate governance system through the application of international approaches and standards, in particular, integrating ESG factors into functional strategy –Carrying out environmental modernization at the Group's production facilities in accordance with the technological strategy – Implementing waste management initiatives for metallurgical and mining operations –Implementing technical and technological initiatives to improve energy efficiency –Developing Metinvest Green Center initiatives to foster a culture of environmental stewardship in the regions of presence –Engaging with industry associations and

[6] Sustainability risk management , https://metinvestholding.com/ua/upload/sr-2020/assets/pdf/

		maintaining an open dialogue with stakeholders on combating climate change to find opportunities for joint research and development projects in this field
Risks related to occupational health and safety	–Workplace injuries and fatalities among employees –Inconsistent and/or informal application of certain risk management tools, resulting in a reduced effectiveness of the overall occupational health and safety management system	–Implementation of a program to improve the effectiveness of critical risk management measures –Integration of industrial safety requirements into the supplier selection process (for work performed by contractors) –Implementation of occupational health and safety software to improve the efficiency of system management –Training of occupational health and safety specialists
Risk of shortage of skilled workers	– Shortage of qualified production personnel, line managers, technical/technological experts and workers	–Development of systems of material motivation of workers and managers with a focus on key priorities: project motivation of teams engaged in strategic projects; production bonuses; motivational systems for repair personnel –Implementation of a curriculum to ensure the necessary qualifications of employees –Development of communication programs to increase employee loyalty –Development and implementation of programs to strengthen the employer brand
Risks associated with non-compliance with business conduct rules	– Corporate fraud – Commercial corruption	–Monitoring compliance with corporate policies and procedures, including the Code of Ethics, the Anti-Money Laundering and Counter-Terrorism Financing Policy, and the Conflict of Interest Disclosure Procedure –Adherence to the Compliance Program –Providing access to a confidential hotline –Raising employee awareness through ongoing training and communication campaigns on business conduct and anti-corruption issues –Conducting mandatory anti-corruption due diligence of suppliers and customers –Conducting mandatory internal security checks of all internal and external candidates for management and high-risk positions

		–Conducting internal audits to assess fraud risks –Implementing the Code of Business Partnership in relations with suppliers

3. Risk management strategies

Risk management is one of the tools that helps create conditions for the effective functioning of any economic system in the face of risk to ensure sustainable development. The main stages of the risk management process are presented in Fig. 1.

The first step in the risk management process is to determine the need for risk management and the goal that the economic system sets for itself. To determine the goal, methods of analyzing and forecasting the economic situation, identifying the opportunities and needs of the economic system within its strategy and current plans to ensure sustainable development can be used. In the most general form, the goal of risk management is to reduce or eliminate losses in the event of adverse events.

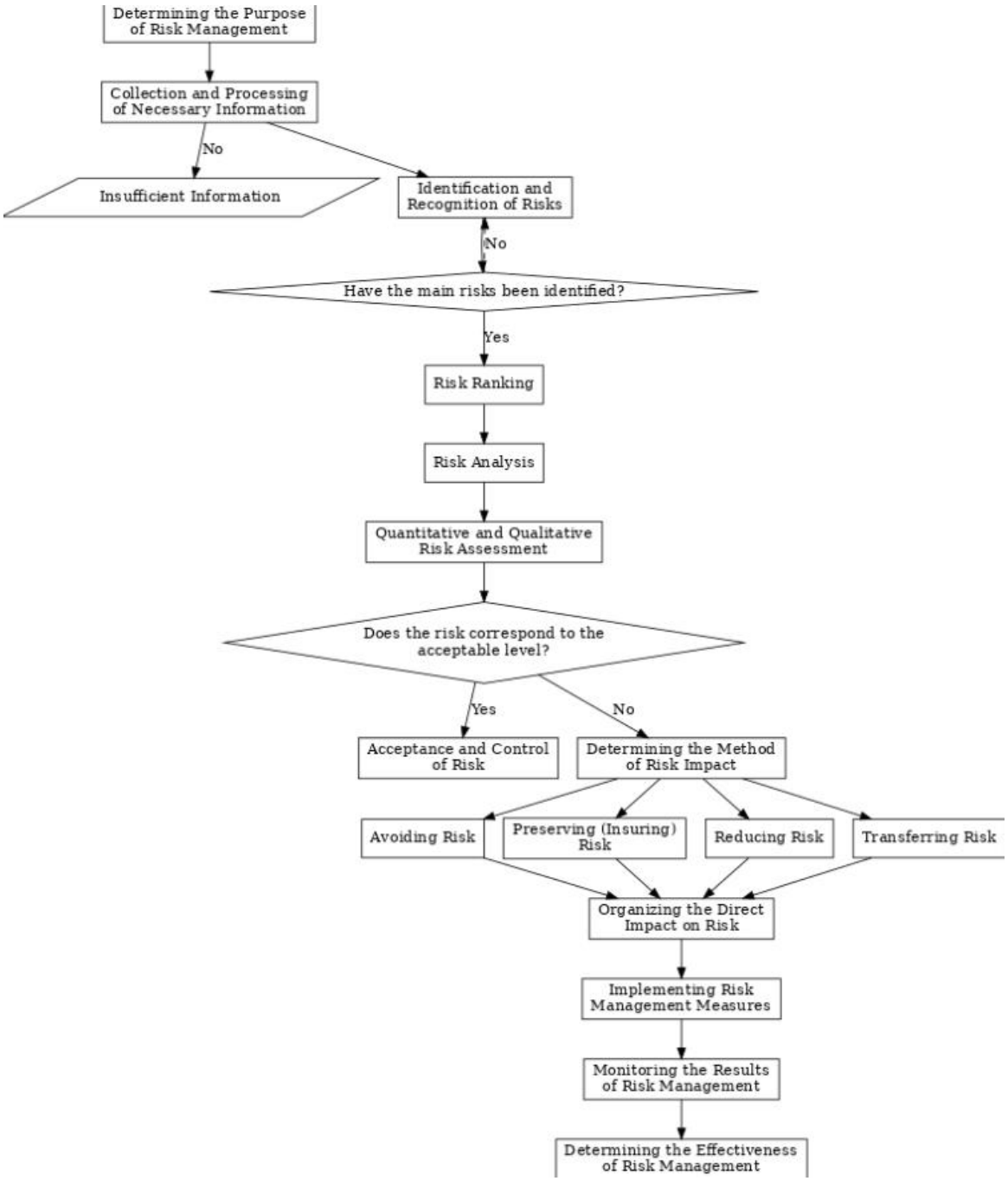

Fig. 1. Risk management process[7]

After determining the goal of risk management, it is necessary to organize the collection and processing of the necessary information, which is one of the most important stages of the risk management process. The completeness and reliability of the information received regarding the external and internal state of the

[7] Боровик М.В. РИЗИК-МЕНЕДЖМЕНТ ЯК ІНСТРУМЕНТ ЗАБЕЗПЕЧЕННЯ СТАЛОГО РОЗВИТКУ. Економіка та управління підприємством.С. 83. https://journals.indexcopernicus.com/api/file/viewByFileId/121420.pdf

environment plays an important role in the subsequent identification of risks and their management.

When identifying and identifying risks, all risks inherent in the object under study are determined. The main thing at this stage is not to miss important circumstances and describe in detail all significant risks. The information collected at the previous stage should be enough to identify the necessary risks and make further decisions on their management. If the information is not complete, then it is necessary to continue collecting the necessary information. At this stage, it is necessary to pay significant attention to the identification of risks, that is, to determine the list of factors that can affect the activities of the economic system under study.

It is also necessary to allocate (or reallocate) resources in such a way that it is possible to identify and determine indicators of new risks, adding flexibility and efficiency to the structure of the economic system, which would allow a quick response to risks, immediately upon their occurrence.

After identifying risks, it is necessary to rank them by the degree of significance and/or impact. The significance of risks can be determined using the method of expert assessments.

The next stage of risk management involves analyzing the identified risks, during which the characteristics of the risk, the probability of its occurrence and the size of possible losses are determined, a set of scenarios for the development of adverse situations is formed, and for various losses, distribution functions of the probability of loss occurrence can be constructed depending on its size.

After conducting a risk analysis, it is necessary to evaluate them (quantitative and qualitative). This will allow identifying the sources of risk occurrence, investigating the scale of possible consequences of the manifestation of risk-generating factors.

Conducting an effective risk assessment allows you to determine the impact of risks on all related elements, to investigate the possible consequences of risks, their probability and correlation with other risks. Probability theory can be used to quantitatively assess risk. This is due to the fact that the information used in decision-making, regardless of its source, is subject to the influence of random factors and can be considered stochastic.

The next stage of the risk management process is to determine the compliance of the acceptable level of risk. If the risk meets the established acceptable level, then there is no need to manage it. Such a risk is accepted as acceptable, but it requires further constant monitoring in order to identify the dynamics of increasing

or decreasing the acceptable level. If the acceptable level of risk increases, then such a risk is transferred to the group of risks that require management using the appropriate method of influence.

Determining the methods of risk impact is one of the most important stages of risk management. At this stage, groups of risks are determined to which certain management methods can be applied.

The main methods of risk impact include the following methods: avoidance, preservation (insurance), reduction and transfer.

Risk avoidance involves measures aimed at preventing risky situations, or actual avoidance of risky activities. However, this method can be used if there are less risky decision-making options.

Risk preservation (insurance) is characterized by the creation of special reserve funds from which losses will be compensated in the event of adverse situations.

Risk reduction involves reducing the size of possible losses, or the probability of unexpected events. Most often it is achieved by implementing preventive measures.

Risk transfer is characterized by transferring compliance for it to third parties while maintaining the existing level of risk. One of the most common methods of risk transfer is insurance, hedging, financial guarantees, mandates, etc.

After determining the methods of influencing specific risks, the next stage involves the formation of a general strategy for managing the entire complex of risks. At this stage, direct influence on the risk is organized, the necessary resources are determined, and specific tasks are set.

At the next stage of the risk management process, risk management measures are implemented. The basis for choosing a specific measure to prevent and minimize risk is to determine the optimal, expedient and economically beneficial type of risk impact in a specific situation. Each type of risk allows for two or three measures to reduce it. Therefore, the problem of assessing the effectiveness of risk management arises.

The final stage of the risk management process is monitoring the results of risk management. Due to the fact that the actual implementation of risk management measures may differ from the planned ones, it is necessary to constantly monitor the risk management process. For this, constant monitoring is required. This will allow you to promptly respond to changes in the external and internal environment. Monitoring allows you to determine the amount of losses already incurred and analyze the measures that have already been taken to minimize them. New circumstances may also be identified that change the level of risk. Monitoring the results of risk management ensures the dynamic nature of this process, as well as flexibility and adaptability.

The final step of the risk management process is to determine its effectiveness. The risk management process is aimed at ensuring maximum risk

management effectiveness. The effectiveness of any economic activity is defined as the ratio of the effect obtained as a result of this activity to the costs associated with the process of its implementation. Accordingly, the effectiveness of risk management can be defined as the ratio of the effect obtained as a result of risk management to the costs associated with the risk management process.

Risk management is a process of influencing a business entity, which ensures the widest possible range of risk coverage, their reasonable acceptance and reduction of the degree of their impact to minimum limits, as well as the development of a behavior strategy in the event of the realization of specific types of risk[8]. [p. 93].

Risk management is a set of methods, techniques, and measures that allow predicting the occurrence of risky events, taking measures to eliminate or reduce the negative consequences of their occurrence[9]. [p. 181].

Risk management is a set of actions of an economic, organizational and technical nature aimed at identifying types, factors, sources of risk, assessing their magnitude, developing and implementing measures to reduce the level and prevent possible losses[10]. [p. 188].

In most interpretations, ***risk management*** is *defined as the process of influencing a management entity on an economic entity in order to minimize the negative consequences of the action of certain factors*. The development of a subject-object approach allows us to move to a systemic one. The functioning of a risk management system assumes the fulfillment of the following prerequisites: risks must be understandable and recognized by management; decisions on risk-taking must correspond to the strategic objectives of the enterprise; expected profitability must compensate for the risk taken; the amount of capital must correspond to the size of the risks to which the enterprise is exposed; incentives for achieving high performance must be consistent with the level of risk.

The purpose of risk management is to ensure the necessary level of resilience and adaptability of the enterprise to possible threats for its stable functioning.

The main objectives of risk management can be:

- timely identification of possible environmental factors that will affect the results of the enterprise's activities;

[8] Устенко О. JL Теория экономического риска : монография / О. JI Устенко. − К. : МАУП, 1997. − 164 с.

[9] Гранатуров В. М. Аналіз підприємницьких ризиків: проблеми визначення, класифікації та кількісні оцінки : монографія / В. М. Гранатуров, І. В. Литовченко, С. К. Харічков; за наук. ред. В. М. Гранатурова. − Одеса : Ін-т проблем ринку та екон.-екол. досліджень НАН України, 2003. − 188 с.

[10] Штефанич Д. А. Управління підприємницьким ризиком : навч. посіб. за заг. ред. д.е.н. Д. А. Штефанича. − Тернопіль : «Економічна думка», 1999. − 224 с.

- assessment of the level of probability of occurrence and the degree of influence of these factors;

- prevention of external and internal dangers and threats that arise during the operation of the enterprise;

- ensuring and guaranteeing the security of the enterprise's activities;

- creation of a favorable operating environment, elimination of the consequences of losses, etc.

To successfully manage risk situations, a manager should adhere to the basic principles of risk management:

1) one cannot risk more than one's own capital allows. This means that before making a decision in a risky situation, the manager must: determine the maximum possible amount of loss in the event of a risk event; compare it with the amount of available financial resources, the possibility of their use to correct negative consequences;

2) one cannot risk "big for the sake of small". The implementation of this principle requires that the manager, knowing the maximum possible amount of loss, determine what it can lead to, what is the probability of risk, in order to make the right decision based on this information;

3) it is necessary to think about the consequences of risk. The implementation of this principle assumes that it is necessary to compare the expected result with the possible costs that the enterprise will incur in the event of a risk event.

Only with the accepted ratio of return and possible losses should one decide to implement a risky decision or project. However, this is not enough. It is important to establish how a specific type of risk affects the results of the activity, what its consequences will be. Moreover, first it is necessary to assess the probability that a certain event will actually occur, and then - how it will affect the position of the enterprise[11] [p. 142].

Risk management uses a variety of tools of influence, which include political, organizational, legal, economic, social instruments, and risk management as a system allows for the simultaneous use of several methods and tools. The most frequently used risk management tool is insurance. Insurance involves the transfer of responsibility for compensation for the expected loss to a third-party organization (insurance company). Examples of other tools may be the refusal of excessively risky activities (refusal method), prevention or diversification

[11] Ніколаєнко С. Н. Ризик-менеджмент у медичному страхуванні / С. Н. Ніколаєнко. − Наукові праці МАУП. − 2011. − № 3. − С. 141–144.

(reduction method), outsourcing of costly risk functions (transfer method), the formation of reserves or stocks (approval method).

Thus, risk management as a type of management activity consists in a timely and adequate response to various threats and the implementation of a conscious, purposeful influence of the management subject on the object with the aim of its sustainable development in conditions of uncertainty, when there is a probability of deviation from the set goals. An effective risk management system increases management's chances of achieving success in the long term.

To ***minimize the impact of climate change on their business***, the most important and difficult measures for companies to implement include:

Developing new, environmentally friendly products or services;

Require suppliers and business partners to meet specific sustainability criteria;

Renovating or relocating industrial facilities to increase their resilience to disasters and climate change.

Obstacles to implementation include the difficulty of assessing the environmental impact of a particular business and the lack of a supply of environmentally friendly materials or resources that provide low emissions. In addition, managers are constantly faced with the ongoing costs associated with the transition to a low-carbon future.

Successful implementation of measures to minimize sustainability risks by enterprises includes:

- the use of environmentally friendly materials, energy-efficient or environmentally friendly automated systems, technologies and equipment;
- efficient use of energy resources and proper training and preparation of employees for activities related to climate change.

The main measures of sustainability risk management include:

- development of new, environmentally friendly products or services;
- requirements for suppliers and business partners to comply with specific sustainability criteria;
- renovation or relocation of industrial facilities to increase their resilience to climate impacts;
- establishing a link between the amounts of remuneration for top management and indicators of sustainable development activities.

The defining prerequisites for ensuring effective risk management in the activities of an enterprise are[12] :

– the presence of an effective risk management system, the main purpose of which is to ensure timely identification of risk and establish communications regarding the management of its level;

– the availability of resources necessary for the implementation of risk management tasks;

– the formation of a corporate risk management culture that strengthens management decisions in this area;

– the presence of a set of effective tools necessary to ensure effective risk management on an ongoing basis.

The main areas of increasing the effectiveness of risk management in the system of ensuring sustainable development of the enterprise in conditions of uncertainty are:

– formation of temporary risk management groups and involvement of external specialists;

– clear division of responsibility for tactical and operational types of risks between functional units;

– substantiation of the enterprise's risk management strategy;

– formation of a risk management culture at the enterprise;

– development and approval of risk management documentation, in particular declarations, programs and guidelines on risk management;

– use of appropriate information technologies and software for risk analysis and assessment;

– introduction of an effective system of insurance against various types of risks.

The following areas of integration of the risk management system into the activities of the enterprise can be distinguished:

– rapid identification of operational risks, namely, launching the process of identifying, assessing, regulating and monitoring risks when creating an annual plan and reporting on individual risk groups;

– creation and implementation of a program that would ensure minimal operating costs (primarily elements of material costs), ensuring the effectiveness of all business processes, adjusting plans in the event of the elimination of force majeure situations;

[12] Буняк Н.М., Мельник А.І., Ризик-менеджмент в системі забезпечення сталого розвитку підприємства в умовах невизначеності. 2023 http://biblio.umsf.dp.ua/xmlui/handle/123456789/6345

– conducting audits of business processes of entrepreneurial activity within specifically defined deadlines, analyzing their effectiveness and controllability (management should implement monitoring based on the inspections conducted, the results of these inspections should be announced to all departments and structural units);

– to minimize the results of risks, it is necessary to actively implement insurance (the Department of Internal Control, Audit and Risk Management should be created at the enterprise, which would ensure the popularization of the idea of insurance protection and coordinated communication between all departments and services);

– in order to minimize risks and guarantee the economic security of the enterprise, a strategy for sustainable development of the enterprise is being formed and implemented, taking into account the developed plans for protection against risks;

– formation of a mechanism for managing cash flows (will allow for a quick response in the internal and external environments, will ensure high liquidity and solvency of the enterprise);

– construction of alternative scenarios for changing the external environment, achieving strategic goals taking into account all possible risks, regulating multifaceted situations with the appointment of responsible persons in each department or subdivision;

– creation of a special fund of the so-called “financial airbag”, which will allow, in the event of a critical situation, to have funds to restore all business processes. This form became especially relevant during the spread of the COVID-19 pandemic, as no forecasts or risk management systems were prepared for such events. Only those enterprises that had special funds were able to survive under strict lockdown conditions, and now during the war they have the opportunity to resume their work or reorient themselves to other areas of activity[13].

Strategic direction of risk management to improve the efficiency of the enterprise's activities in the enterprise management system is recommended to be carried out on the basis of[14]:

[13] Чайкіна А.О., Золотар К.В. Основи формування системи ризик-менеджменту на підприємстві. Економічний розвиток держави та її соціальна стабільність : матеріали Міжнародної науково-практичної Інтернет-конференції, 14 червня 2021 р. Полтава : Національний університет імені Юрія Кондратюка, 2021. С. 47–48.

[14] Чайкіна А.О., Колідуб К.М. Особливості інтеграції ризик-менеджменту в систему управління підприємством. Економіка та суспільство. 2022. № 39. С. 454–459.

– development of a risk management strategy, special attention should be paid to monitoring by Top Management regarding risk management and providing them with appropriate reporting;

– integration of risk management into business processes, since the introduction of risk management into business planning operations and performance assessment allows enterprises to achieve strategic and operational goals;

– improvement of management functions, which allow reducing costs, increasing risk coverage and improving the efficiency of business activities;

– improvement of processes and control measures, because by focusing on leading business processes and using automated control measures, it is possible to reduce costs and improve the efficiency of developing control processes;

– optimization of risk management and provision of information to stakeholders regarding risk pressure, active measures to counteract them and opportunities for ensuring sustainable development of the enterprise.

Only with the interaction of management at different levels of management, timely provision of information to all services and departments with a quick response to various events, will it be possible to ensure the sustainable development of the enterprise and contribute to the achievement of all set goals.