

RISKS OF INNOVATIVE ACTIVITY: ECONOMIC AND LEGAL ANALYSIS

Nataliia Kuznietsova¹, Liudmyla Kot², Oleksii Kot³

Abstract. As experience in the development of the economy of different countries shows, risk is an integral factor in a market economy. The rapid development of science and technology, the emergence of new technologies, their implementation into production, the increase in the number of innovative projects give rise to new types of risks, which, in turn, complicate social relations. The lack of a unified approach to the scientifically justified definition of risk, its features, classification criteria, as well as the lack of a conceptual and categorical component necessitates the further study of risk in law, which is reflected in the qualitative legal regulation of the relations of participants. *The subjects of the research* are the economic and legal aspects of innovative activity risks. Accordingly, *the purpose of the article* is a study of the nature of risk, the main classification features, defining the role and place of legal risks, identifying the main approaches to risk management of innovative projects. To achieve this goal, we have used the following *research methods*: analysis and generalization of theoretical sources and scientific literature; abstract-logical method in the process of theoretical generalizations and formation of conclusions; general scientific methods of analysis and synthesis. *In the result of the research conducted* it is determined that the risk of an innovative project is a set of risks that combine the elements associated with a particular innovative project, that is, for each specific project and the entity that develops, implements and manages the project will be its own set of risks. A prerequisite for business decision-making is the skills and ability to manage risk, which is to determine its acceptable limits, taking into account the potential negative consequences, which, among other things, will minimize the impact of the risk factor on the planned economic outcome of the introduction of innovation. A crucial factor in ensuring the success of the innovative risk management process is interaction at all stages, in particular during the identification, analysis, evaluation, control, monitoring of risks. Engaging and understanding the risk management process and its need for all project participants ensures the effectiveness of structural and organizational risk management measures. Effective risk management requires commitment, as well as the conscious behavior of each person. The motivation and interaction of the parties involved in the project ultimately determine the quality of the work and therefore the success of the project.

Key words: entrepreneurship, risk society, innovative risks, legal risks of innovative business, risk management.

JEL Classification: L26, M20, K10

1. Introduction

As experience in the economic development of many countries shows, risk is an integral factor in a market economy, regardless of social factors, geopolitical features and the specifics of legal system of any state. Limited resources and intensification of competition lead to increased uncertainty in economic conditions. An increase in uncertainty leads to a corresponding increase in risks of trading participants.

The problem of risk is of particular importance in entrepreneurial activity. According to Art. 42

of the Economic Code of Ukraine, entrepreneurship (entrepreneurial activity) is an independent, initiative, systematic, economic activity carried out at own risk by economic entities (entrepreneurs) with the aim of achieving economic and social results and profit.

The essence of entrepreneurship is finding and testing something completely new, something that was not in the structure of production or in a society as such. Therefore, it is extremely important for the entrepreneur not so much to prevent the risk, but to be able to predict its occurrence, to correctly identify the risk, to assess the

Corresponding author:

¹ Kyiv Regional Center of the National Academy of Legal Sciences of Ukraine, Ukraine.

E-mail: prof.kuznietsova@gmail.com

² Taras Shevchenko National University of Kyiv, Ukraine.

E-mail: lyuda.kot@gmail.com

³ Scientific Research Institute of Private Law and Business of the National Academy of Law Sciences of Ukraine, Ukraine.

E-mail: oleksiy.kot@gmail.com

degree of risk and to manage it in order to reduce the risk to the lowest level, or minimize the risk.

2. Literature review and research methodology

There is a lot of work on risk issues as this topic is extremely relevant. Among foreign scientists there can be distinguished U. Beck, S.M. Vorobiov, V.M. Hranaturov, A. Damodaran, M. Krui, T.Yu. Serebriakova, O.S. Shapkin, R. Schwebler and the Ukrainian researchers, as Z.S. Varnalii, V.A. Kravchenko, Yu.F. Pachkovskiy, V.O. Syzonenko, A.O. Starostin, D.M. Chervanova, etc.

To achieve this goal, we have used the following research methods as: analysis and generalization of theoretical sources and scientific literature; abstract-logical method in the process of theoretical generalizations and formation of conclusions; prognostic and diagnostic; general scientific methods of analysis and synthesis. In particular, the method of semantic analysis is used to clarify the nature of the category of "risk"; the method of morphological analysis is used to clarify the composition of the conceptual apparatus, which is directly related to the issues of risk management of innovation activities.

3. Theoretical aspects of the study of the "risk" category

Some researchers emphasize the existence of global risk, which is a consequence of the processes of globalization, the content of which is the growing interconnection and interdependence of national economies, national political and social systems and cultures (Mamaeva, 2010). Globalization is a decisive factor in both national and international development, which results in the fact that, to date, almost no economic operation can be abstracted from world economic processes. At the same time, such inherent features of globalization as unevenness, asynchrony, disproportionality of development are accompanied by crisis phenomena and processes that are sources of risk.

As a consequence, the features of risk at the present stage, such as its totality and comprehensiveness, have led to the assertion that the problem of risk is gaining general economic importance, since risk is perceived as one of the main factors of modern and especially future society. Some authors, including Robert Schwebler, Ulrich Beck, even see this as the beginning of the process of forming the newest stage of development of society, which is the "risk society", and claim that humanity has already entered this new phase/stage of development (Granaturov, 2010).

The reason for this change, according to these authors, is that in the present circumstances, most of the threats and the risks they cause are no longer local in nature, but are becoming global. But the main problem of future

economic growth will be not so much in the progressive need for funds to finance new investments, but in the need to reserve capital in order to meet those risks. This approach is reflected in the definition of the so-called "risk society": "Risk society is a postindustrial formation, which differs from industrial society in a number of peculiarities, the main difference being that the industrial society was characterized by the distribution of goods, and for the risk society it is the distribution of threats and the resulting risk" (Ivanov, Oleyinikov, Bocharov, 2008).

Moreover, some researchers of risk theory suggest that further transformation of a "risk society" into a higher-level society – a risk management society – would be logical in the near term. That is, society will build its economic development strategy not only on the basis of risk, but even on the basis of risk management.

There are many different definitions of risk in the literature. Some authors define risk as an activity related to overcoming uncertainty in a situation of inevitable choice, in the process of which it is possible to quantitatively and qualitatively assess the likelihood of predictable outcome, failure and deviation from the goal (Shapkin, Shapkin, 2011).

It is also possible to find the definition of risk as the possibility of events occurring that adversely affect the activities of an enterprise or technical system, which is determined by probability and consequences. Risk is not the event itself. Risk is an opportunity (Evstafiev, 2008).

However, some scientists define risk as an event or a group of accidental events that cause the loss of an object that is affected by that event.

There is a definition of risk as the expectation of negative consequences of economic activity. It is noted that risky activity does not always bring only losses, its result can also be zero or profitable.

It is also determined that risk is the conscious activity of an entity to address the uncertainty situation in order to obtain the most acceptable outcome (Vorobiov, Baldin, 2009) and as a consequence of making decisions in the context of incomplete, inaccurate and (or) questionable information, that is, in uncertainty or incomplete certainty (Mamaeva, 2010).

Under uncertainty one should understand the impossibility of assessing future developments, both in terms of the likelihood of their realization and their impact. Uncertainty is something that cannot be assessed, so we will talk about incomplete certainty (risk).

The conditions of uncertainty that occur with any type of business activity are due to the fact that economic systems in the course of their operation depend on a number of reasons. Accordingly, there can be distinguished economic uncertainty, political uncertainty, natural uncertainty, temporal uncertainty, etc.

Over time, uncertainties arise into retrospective, current, and prospective ones. The need to take into account the time factor in evaluating the economic

effectiveness of decisions is due to the fact that the levels of the largest cost, but differently distributed over time, provide the same result.

Uncertainty factors are divided into economic (commercial) and political. Natural uncertainty is characterized by a set of factors, among which may be climatic, weather conditions, etc.

Risk as such is related to the possibility or threat of deviation of the results of specific actions or decisions from the expected ones. Thus, the risk can also be manifested in the fact that in a given market or its area a new product may be unrealized in the amounts that were calculated based on the results of marketing research. Just like choosing options for pricing strategies to break into new markets, one cannot say with certainty that an enterprise is expecting success because competitors can respond with adequate action. As a consequence, there is a possibility of loss or shortfall in profits.

4. Innovative activity and related risks

Innovative activity, as compared to other activities, is more risk related, since there is virtually no full guarantee of a positive result. As a result, innovative projects are more dependent on the uncertainties that cause the risks.

Innovative risk is defined as the probability of losses arising from the investment by an entrepreneurial firm into the production of new goods (services), which may not find the expected market demand (Ivchenko, 2004). Thus, the concept of risky activity is broader and includes the concept of "innovative activity", and innovative risk is a particular type of entrepreneurial risk.

The high level of risk in innovative activity is explained by the fact that the introduction of innovations requires considerable costs, but not all innovations bring the expected profit. It is necessary to take into account such peculiarities of implementation of innovative developments as a long period of their implementation and a large number of participants involved in this process, including from different industries and from other countries.

The innovative activity of an enterprise is significantly affected by financial risks, i.e. those related to financial activities and arising in the course of financial transactions. The financial risks of innovative projects can be attributed, in particular, the lack of funds necessary for their implementation, the financial condition of the enterprise, the availability of credit resources and others. The innovative activity of an enterprise is also influenced by organizational risks, such as enterprise innovation strategy, efficient organization of innovative business units, choice of marketing strategy for promotion and implementation of innovations, choice of production technology, resource suppliers, contractors, etc. Organizational risks should be given a lot of attention, as several start-up businesses with

equal access to resources ultimately achieve different performance and this depends, first and foremost, on the proper organization and efficient management of the business. Most companies respond to changes in the market successfully, and success depends on the ability to predict and plan the need for future changes, that is, to ensure the continuity of the improvement process. Companies that have been able to build a management system that delivers higher results than other companies in the industry have a strong competitive advantage.

Legal risks play an independent role in transition economies. Formation and permanent changes to legislation, lack of a well-established culture of enforcement, a dysfunctional system of state bodies and the judiciary, and other features inherent in such countries, all significantly increase the potential negative consequences of neglecting legal risks. Therefore, minimizing this type of risk is an urgent need of any business in transition economies. Legal risks in the innovative business need the utmost attention, since legislation often does not only provide the necessary tools to guarantee investors' rights, but also very often does not even provide for primitive regulation of business relations in this field, creating a dangerous legal vacuum.

That is why the function of identifying and assessing the possibilities of minimizing legal risks, as a rule, is delegated to specialists, that is to legal advisers and consultants who are well versed in the specifics of legal regulation of entrepreneurial activity in a particular field.

The research of risks affecting the implementation of innovative projects has received considerable attention in the economic literature. In particular, some authors assign these risks to groups such as financial, organizational, marketing, product, and personnel management risks (Zhezhuha, 2009).

Innovative risk can arise both when introducing a cheaper method of manufacturing a product or service compared to what is already being used and when creating a new product or service. However, when manufacturing a new product or service, it must be kept in mind that the new product (service) may not find a buyer or new equipment and technologies will not meet the necessary requirements for the production of the new product (service), or the created equipment will not be sold in case of failure, because it is not suitable for the production of other products (Ivchenko, 2004).

Risks arising in an innovative enterprise can be classified as follows: risks of choosing an innovative project, risks of under-financing of an innovative project, risks of providing the necessary resources, risks of failure of economic contracts, risks of occurrence of unforeseen expenses and reduction of income, risks of realization of project results increased competition and the risks associated with protecting property rights, both as a result and as the innovative project as a whole.

5. Features of risk management of innovative activity

Risk management in innovative activity is a set of practical measures that can reduce the uncertainty of results of innovation, increase the usefulness of development, and reduce the cost of achieving an innovative goal.

To manage the risks of innovative activity, it is necessary to identify the possible risks, i.e. to analyze and evaluate the identified potential risks.

Risk classification is one of the stages of risk analysis, which allows further identification and assessment of risk, as well as developing methods for managing them. Classification consists in the distribution of risks by groups according to different classification criteria.

There is no single approach to risk classification in the literature. Often, risks are classified on the basis of the nature of the consequences and distinguished between pure and speculative. The peculiarity of pure risks (statistical or simple) is that they are almost always a loss for business. Such risks may be caused by natural disasters, accidents, other circumstances of force majeure, etc. Speculative risks (dynamic or commercial) involve either losses or additional profit for the entrepreneur. The causes of speculative risks may be changes in foreign exchange rates, changes in market conditions, changes in investment conditions, deliveries and others.

There are classifications based on differences in activities (financial risks, legal risks, production risks, logistics risks and others). Often, risks are classified according to their manifestation areas (political risks, social risks, natural risks and others). Classifications are developed depending on the characteristic of the threat (by type of object, by nature of losses, by type of negative consequences), according to the characteristic of the available risk information (by degree of predictability of risk, by type of information, by degree of reliability of information), based on the magnitude of risk (in terms of frequency of losses, size of losses, distribution of losses), as well as many other classification features (Kudriyavzev, 2010).

In identifying and analyzing risk, information plays a very important role because due to its presence and objectivity that the right decisions can be made in the face of risk and uncertainty. The amount and content of information required depends on the situation, but there are a number of principles that must be met, such as accessibility of information, reliability of information, usefulness of information.

Risk identification and analysis are essential elements of the risk management process. The main purpose of risk identification and analysis is to develop a holistic risk picture for decision makers, as it enables an effective and productive risk management system to be put in place.

Risk assessment can be performed due to qualitative and quantitative analysis. Qualitative analysis involves identifying and understanding the existence of uncertainty, threat and risk situation, identifying sources of risk and their characteristics, classifying risks, obtaining and analyzing information about each risk, analyzing the causes of risk situations and investigating the consequences of risk decision making. However, it is necessary to analyze both the individual identified risk and the interdependence with other risks, since the impact of one of the risks may be insignificant, but the simultaneous occurrence of several risk situations can have catastrophic consequences for the enterprise. Such risks are called mutually reinforcing. Conversely, the risks, the simultaneous occurrence of which offset the negative impact of each of them, are called mutually mitigating (Nikonov, 2009). First of all, it is necessary to identify the risks that will lead to the most grave consequences, in particular, to business shutdown.

Quantitative analysis determines the numerical values of the probability of occurrence of risk situations, assesses the level of risk, as well as the acceptable (critical) limits of the level of risk. The quantitative assessment of risks begins with the collection of information about them, including statistics of past periods, since statistics is the most objective information about the activity of an enterprise. In addition to statistics, sources of information on different types of risks can be organizational chart and decision-making scheme at the enterprise, cash flow, resource and information flows, surveys, questionnaires, company documentation, description of accidents, inspections and examinations (Ivanov, Oleyinikov, Bocharov, 2008). Information itself is a key aspect in identifying risks, because having the necessary information allows you to make the right decisions in times of uncertainty and risk. However, in cases where statistics on the activities of economic entities cannot be obtained, mathematical methods become ineffective.

The most adequate risk information is historical data on the relevant object, because such data take into account all its specific features. However, very often only inside information is not enough to carry out a risk analysis. Therefore, in addition to the inside information, they use information from external sources (one that is not directly related to the activity of the firm). These sources include branch statistics, competitor information, industry innovation information, and more.

Risk can be assessed by direct and indirect indicators. Direct indicators of entrepreneurial risk are the indices of growth of basic economic characteristics (production or sales volume, net profit, etc.). Indirect indicators of investment risk include the characteristics of the state of capital (intensity of turnover of assets, the ratio of debt and equity, liquidity of assets and others).

In the early stages of decision making, when it is important to get a general idea of the business, it is quite

useful to do break-even analysis. The size of profits and losses of an organization largely depends on the sales volume of its products. With the express aim to find out what the sales volume of the organization's products should be in order to achieve profitability, and a break-even analysis is conducted. The break-even point characterizes a situation in which the total revenue from the sale of an organization's products fully covers the costs of its production and sale (a situation where the organization receives no profits but no losses).

Thus, the break-even point shows how many units of products an organization needs to sell in order for its costs to pay off its revenue. The sale of each successive unit of production will bring profit to the organization. On the contrary, lowering the sales volume below the break-even point means that the organization will suffer losses.

However, it must be kept in mind that such an analysis is based on a number of assumptions that may or may not be fulfilled in each practical case (Prosvetov, 2011):

- all costs can be identified and classified as fixed or variable;
- all variable costs are directly proportional to sales volume (that is, as sales increases, variable costs also increase);
- the quantity of goods is constant, that is, the lack and defect of the goods are not allowed;
- break-even analysis is based on accurate cost and revenue forecasts and the entire system is in stable condition.

Break-even point is the value of the volume or level of sales (operations) at which the aggregate income equals total costs, that is, a point of zero profit or zero loss (the company receives neither profit nor loss).

Break-even analysis of the project reveals the dependence of the amount of profit on the determining factors: sales volume, changes in the price of products, costs of construction of the enterprise, prices for raw material, etc. This information, given the desired range of values of sales prices, costs of the enterprise and others, can be used to evaluate the investment project and the investment risk.

Among the methods of risk analysis are statistical method, methods of analogy, score, method of decision tree, expert methods, risk modeling.

Recently, risk management has shifted towards complication of economic models. The current approach to risk management is based on determining the value of risk Value-at-Risk (VAR), which belongs to a class of statistical models, the basic concept in it is probability distribution, which relates all possible magnitudes of changes in market factors with their probabilities (Ivanov, Oleyinikov, Bocharov, 2008).

After obtaining an assessment of the possible risks, it is necessary to develop a risk management strategy in case of their occurrence, i.e. to determine ways (methods) of responding to the identified risks.

An interesting approach to risk management is that it proposes to apply three main strategies: risk-informed strategies, warning / cautionary and discursive strategies (Renn Ortwin, 2008; Terje Aven, 2016). The risk communication strategy includes measures such as risk avoidance, mitigation and transfer. One of the most important aspects of such a strategy is the ability to quickly obtain information about the possibility of serious complications. The main objective of such a strategy is to reduce uncertainty, risks and vulnerabilities. The cautionary strategy is also referred to as the reliability and sustainability strategy. This strategy uses measures such as containment, development of alternatives, calculation and compliance of safety factors, diversification and development of systems of flexible reaction to emergence of situations which can cause risk, improvement and adaptation of systems of emergency management. Discursive strategy also uses measures by which it is possible to achieve confidence in the further stable activity of companies by reducing the uncertainty that is achieved by finding out the facts of the implementation of risk events, analysis of accident reports, involvement of injured people, etc.

The most common risk response strategies are, first, mitigation of innovative risks, and second, the adoption of innovative risks when analyzing and evaluating the most likely risks and developing a strategy for the enterprise in the event of their occurrence, as well as optimizing the level of impact of innovative risks.

Choosing a risk management strategy requires the person taking the action to accurately "review" and "evaluate" the situation and scenarios, which may happen in the future. Based on this, decisions are made to eliminate all risks and take every opportunity. This means the need to identify all potential risks and circumvent the threat by preventing, eliminating or reducing its negative effects (Martin Schieg, 2006).

Also, the choice of a method of risk minimization is determined by such factors as the subject's propensity to take risks, types of risk, etc. Moreover, economic viability should remain a prerequisite for such a choice.

Risk minimization can be done by allocating risks between project participants to make the risk taker responsible for calculating and controlling the risks best, and the most financially sustainable, capable of overcoming the effects of the risks.

The ways of risk minimization can include external risk insurance, limit setting, diversification, reserves and inventories, etc.

It is possible to minimize the risks through the diversification method. This method allows to reduce risks by distributing investments in different directions, such as different markets, financial instruments, trading strategies, etc. Portfolios of risky assets can be formed in such a way that if one of the investment projects turns out to be unprofitable as a result of unforeseen events, then other projects may prove successful and will generate profit.

Also, entrepreneurs often use insurance and hedging methods to minimize or optimize their risks. Insurance as a system of economic relations involves the formation of a special fund of funds (insurance fund) and its use (distribution and redistribution) to overcome by paying insurance compensation of various losses, losses caused by adverse events (insured events). The company can independently form a reserve fund to cover losses, and can apply to an insurance company.

Hedging is an effective way to reduce price risk by entering into futures contracts (futures and options). Buying and selling fixed-term contracts, the entrepreneur protects himself/herself from fluctuations in prices in the market and thus increases the certainty of the results of his/her production and economic activity.

There is a significant difference between insurance and hedging. When hedging, an entity avoids the risk of losses by refusing the opportunity to make a profit. When conducting insurance, the company pays a premium to avoid the risk of loss, but retains the opportunity to make a profit.

Some authors propose new methods of risk management, in particular the method of total risk management (Evstafiev, 2008). The essence of this method is to create a system of corporate activity aimed at the continuity of the improvement process. The methodology of the total risk management method is that the company continuously maintains risk accounting and monitoring. When making any management decisions, a forecast of risks or negative consequences is made, and thus a process of continuous improvement of the company's management systems is established. The risk is understood as the possibility of an undesirable development of the situation in all processes: from the operation of individual equipment to the implementation of the market strategy of the enterprise.

The following rules of risk management must be taken into account for risk decision making:

- one cannot take more risks than your equity allows;
- it is necessary to think about the consequences of risk;
- one cannot risk more for the sake of less (Shapkin, Shapkin, 2011);
- a positive decision is made only in the absence of doubt;
- one cannot think that there is only one solution, there may be other solutions.

6. Conclusions

The need to implement the risk management system as quickly as possible in innovative projects stems from the fact that potential opportunities for risk always exist, at least in its initial form, either before or at the beginning of the project. Although such risks have already been identified, their effects and impact on the further development of the project cannot be definitively predicted. For this reason, the risk management process must be implemented and integrated into the entire project implementation process as a permanent management task. At the same time, the identification, analysis and assessment of risks should be focused on both the whole project and the individual aspects of certain stages of the project.

A crucial factor in ensuring the success of the innovative risk management process is interaction at all stages, in particular during the identification, analysis, evaluation, control, monitoring of risks. Engaging and understanding the risk management process and its need for all project participants ensures the effectiveness of structural and organizational risk management measures. Effective risk management, above all economic and legal, requires understanding as well as the conscious behavior of each individual. The motivation and interaction of the parties involved in the project ultimately determine the quality of the work and therefore the success of the project (Martin Schieg, 2006).

Thus, the risk of an innovation project is a set of risks that combine elements that are specific to a given innovation project, that is, for each specific project and the entity that produces it, will be its own set of risks. However, it is necessary to be aware that business is not possible without risk. And in order to survive in a market environment, it is necessary to implement new technologies effectively, entrepreneurs need to avoid risk, but to learn and be able to predict events, assess the level of risk, go for risk, but not go beyond acceptable limits.

Thus, a prerequisite for business decision-making is the skills and ability to manage risk, which is to determine its acceptable limits, taking into account the potential negative consequences, which, among other things, will minimize the impact of the risk factor on the planned economic outcome of the introduction of innovations.

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