The issue of improving of possessory risk management systems in the transition to the fifth and sixth technological paradigms

Mejora de los sistemas de gestión de riesgos patrimoniales en la transición a los paradigmas quinto y sexto de la tecnología

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1. Introduction

Over the past twenty years, the process of forming special economic zones, as a mechanism for the creation and development of small- and medium-sized industrial enterprises, has been widely accepted both at the level of national economies and in the global economy. Obviously, it was made possible due to the fast growth of information technology and the development of communication systems. Cooperation networks, chains, and groups of companies have become essential elements of the development of national economies and the global economy in general. The global economic crisis in 2008–2009 confirmed that, in modern conditions, such mechanisms are the key elements of ensuring the growth of competitiveness and the prosperity of society.

However, the author considers it necessary to note that the process of integrating industrial enterprises into special economic zones does not always take place properly and does not always bring the desired result. It is important to note that creating a special economic zone or an industrial group is not in itself a universal means of solving the economic problems of a country in general and a region in particular.

At the beginning of the 20th century, in his work The Economics of Industry, English economist A. Marshall wrote that integration of industrial enterprises in industrial zones within specific regions leads to an increase in concentration, what allows their owners to receive essentially larger profit due to such factors as economies of scale and the effects of surplus, and it guarantees less dependence of enterprises on external factors [7, p. 134].

The results of the above process are:

- developing a network of industrial zones whose activity expands the access of industrial enterprises to investment and information resources, as well as improves the cooperation of these enterprises with partners in other industries;
- facilitating the access of industrial enterprises to resources such as skilled labor force, as well as to scientific developments and know-how, that are necessary conditions for competitiveness;
- accelerated dissemination of ideas, knowledge, and technical innovations between the companies participating in the zone;
- creating an internal "industrial environment", characterized by the existence of formal and informal business practices, traditions, social values, and specialized institutions, providing for the introduction of innovations in this zone and supporting the efficiency of work [6, p. 145].

It can be concluded from the above that, in modern conditions, as in the beginning of the last century, entrepreneurs are looking for an optimal interaction model – the basis of production and preparation for production, and, consequently, a model of adaptation to market conditions, which is reflected in the constant improvement of the finished product quality, the efficiency of production, its flexibility, and cost reduction. It is obvious that the process of integrating industrial enterprises into industrial zones is caused by many factors:

- the acceleration of scientific and technical progress,
- constantly changing market conditions,
- stricter quality requirements on the part of customers,
- the need to introduce innovative approaches in the production process,
- transformations of development strategies of areas, regions of the country, and the world,
- an increasing complexity of international cooperation [8, p. 93].

2. Concept development

Acceleration of scientific and technological progress implies an increase in the of production automation, what changes the basics of the production cycle, reduces the time costs and hence the price of the final product.

The changes caused by the development of risk management systems are mainly determined by the introduction of new types of production, the transformation of production control mechanisms, and the improvement of production quality control methods. The author considers it necessary to...
note that these changes are the result of the development of integration processes within special economic zones and, in particular, industrial zones. In modern conditions, changes in individual markets have a great importance for the development of industrial zones. These include:
- the market saturation,
- the impact of globalization,
- the ever-increasing need for production innovation [1, p. 967].

Large companies, that want to increase their competitiveness and to succeed in a post-crisis environment, allocate significant funds for the modernization, restructuring, recovery, and a possible change in the concept of their own production. In their turn, to compete with large firms and establish themselves in the market, small and medium-sized firms are forced to seek opportunities for joint development, to expand mutual ties, unite in industrial chains, networks and, ultimately, to integrate into special economic zones. The process of forming an industrial chain is to combine the efforts of companies within a specific area or territory for mutual assistance and cooperation in the field of production. The purpose of creating such an association is to strengthen the position of its participants in the market through the benefits of participation in this union [4, p. 959].

There are several forms of such associations.

The first level of industrial chain forming is creation of conditions and mechanisms for mutual assistance between two companies. Practically, this means that, based on two management systems, such companies form a single system which determines the level of demand for production capacities or services, namely, machines, labor force, warehouse facilities, the directions for the supply of finished products, as well as resource allocation. The outcome of the first level of chain formation is not receiving an instant benefit for the both company from their joint activities, but rather creating the so-called "good experience" of interaction, which is important for further cooperation within the chain [5, p. 56].

Besides the above advantages, the level under investigation is characterized by many disadvantages:

- a low level of integration;
- a high probability of losing interest in the further formation of the chain by the partner company;
- the possibility of making a profit by only one side [5, p. 60].

The second level of chain formation is a one-time collaboration of two or more companies in the process of fulfilling a specific order. In Eastern and Central Europe, this mechanism for creating an industrial chain is used in the form of partnerships, associations of companies. Such groups of companies could use the subordinate form of creating a chain even without a deep legal framework which is necessary in the cooperation of large companies. The advantage of this form is the possibility of expanding the companies' specialization and strengthening their competitive advantage [3, p. 2671].

It should be noted that this level is also not devoid of some disadvantages which include:

- a medium scale of integration;
- the temporary nature of cooperation, leading to a decrease or total absence of any effect from chain formation [3, p. 2673].

The third level of chain formation is to expand cooperation and mutual assistance. A company interacts simultaneously with several partner companies, which allows them to take full advantage of the benefits resulting from creating an integration link. At this stage of chain formation, the following effects are observed:

- deepening relationships between participating companies;
- an expressed interest in a long-term cooperation;
- an increase in current profit from chain membership;
- forecasting future profit growth [2, p. 235].

One of the advantages of an industrial chain is that the companies cooperating within its framework have at the same time the opportunity to create their own chains with companies that are not members of the chain. This form of interaction strengthens the long-term cooperation of companies within a specific region, the result of which is the formation of a special economic zone. Thus, it can be concluded that the formation of an industrial chain begins with the general formal cooperation of individual companies. In the process of this cooperation, its mutual benefit comes to the fore. A low formalization degree of cooperation strengthens the relations and allows for the participants to develop competition with other companies both within the industry and in the economy. A negative factor is the possibility of expanding industrial chains to cartel agreements, which are an obstacle to competition. This risk is minimized due to the local nature of the interaction and the small size of the participating companies. However, as the number of chain members and their size increase, this risk becomes more significant.

It is obvious that in the long-term development of the Russian paradigm of possessory management should contribute to the gradual transformation of the models of possessory management by the dominant influence of the owner on all the processes of management of the organization to the formal separation of management and ownership. The transition to the use of hired management will allow the owner to create different ways of monitoring the activities of the organization through the development of possessory risk management systems and mechanisms possessory management.

In modern conditions, the model of possessory management is a tool of change the role of the owners in these models, and their implementation impacts on the management processes in organizations. Development strategy of Russia until 2020 provides for the measures to turn the country into one of the most dynamic and competitive economies in the world, a framework which must be high-tech industries [2, p. 1-2].

Achieving this goal requires a radical modernization of the entire industrial sector, its efficiency, quality and safety. As well as improving efficiency, quality and safety of transport systems, since the stimulation of mobility of the population is the main condition for the successful formation of a postindustrial society and the welfare of citizens. Obvious is the fact that the industry and transport networks in present conditions becomes of ethnic status and become an important factor of integration and globalization of the economy. So the growth of efficiency of industrial production depends on the regularity of supply of materials and components, which can be achieved only in the presence of well-developed international logistics and transport infrastructure.

This article will be devoted to the analysis of the main threats to economic security of all types of small and medium-size companies and forming of the possessory risk management system of these companies.

3. Literature review

market (not to be able to sell the product, not to obtain the planned profit or suffer a loss, to be driven out of the market and to fail) [11].

I. T. Balabanov in his book "Risk management" expressed the opinion that business risks represent the risk of losses during financial and economic activities. They mean the uncertainty of the result from the business transaction [12]. With this opinion agree with other authors (for example, V. N. Kochetkov, N. Shipova) [13].

S. M. Bychkova, and L. N. Rastamanov in the book "Risks in the audit activity" define business risk as the risk arising in the implementation of the goods and services produced or purchased by the entrepreneur [14].

N. V. Khokhlov believes that commercial risks can also be defined as the risks associated with the possibility of a shortfall in profits or losses may occur in the process of trading, can take the form of events such as insolvency of the buyer at the time of payment, the customer refuses payment for the product, change in product prices after conclusion of the contract, reducing demand for the products [15].

Generalization of Russian and foreign theoretical and practical developments in the field of risk management in the trade allows the author to conclude about the lack of coverage this problem, often research is conducted without considering sectoral specifics. The theory of the formation of the risk management systems to trade neither at the conceptual nor at the functional level has not yet been developed.

Studies also show about the ill-conceived and ineffective use of risk management at trade enterprises. This situation is primarily due to the complexity and multifaceted risk management system and its elements; the presence of many factors affecting its formation and operation; existence of different approaches and points of view on what constitutes appropriate risk management techniques; lack of sufficient number of qualified professionals who would be able to apply various risk management techniques.

4. Research methods

As a method of study, the authors used the means of statistical data analysis of Russian and foreign agencies, devoted to the state of the consumer market of Russia.

As a main methodological tools following methods were used: comparative method, methods of deduction and induction, a method of analogies and other methods.

Risk-management techniques are a set of techniques for the prevention, control and restriction of risks (probability of loss, amount of potential and real losses, and the primary and secondary effects of risks).

The effectiveness of the organization risk management is largely determined by the classification of methods of risk management, which is a distribution of risk management techniques for specific groups to deal with specific characteristics to achieve the goals. Scientifically reasonable classification of methods of risk management creates opportunities for normal operation on early and targeted prevention and risk minimization, timely and full compensation of losses incurred in the process of implementation risks, and saves time and money on bringing these methods into action.

In the Russian and foreign theory and practice of widely used risk management methods and their classification.

In the practice of project risk management is used a simplified classification of risk management techniques. They are divided into: the allocation of risk between the project participants (transfer part of the risk to the subcontractors); insurance; reserve funds to cover unexpected expenses [11].

Some experts prefer to classify the methods of risk management: diversification; acquisition and insurance; receive the additional information [12]. Other methods are divided into: methods of risk reduction; methods of conservation of risk; methods of risk transfer [13].

Third is classified all the methods of risk management techniques to avoid risk; risk retention; risk transfer (diversification, acquisition of additional information on choice and results, limitation, self-insurance, insurance) [14].

Risk management methods are also divided into methods: avoidance of risks (methods of risk transfer risk); the localization of risk (concentration risk within individual element of the organizational structure of the enterprise); dissipation of risk (legal Association with business partners to manage risk common to all partners); risk compensation [11].

Another simplified approach to the classification of risk management techniques is some simple division techniques on the following: diversification; evasion from risk (insurance); compensation (acquisition of information, formation of financial and material reserves); localization [15].

The most common classification of methods of risk management in foreign economic literature include the following. It includes: method of risk avoidance (only for market, the flow, time to date remains insufficient for accelerating the pace of its expansion. Country in many positions lost in the issue of attracting investments to other developing markets, particularly Asia and South America. This provision creates a risk to the sustainability, competitiveness and socio-economic situation of Russia.

One of the factors contributing to the elimination of the mentioned risk should be the formation of an effective system for monitoring and ensuring the owners’ risk. Development of scientific-technological progress creates new opportunities and methodologies for monitoring and ensuring the economic sustainability of the business, natural and man-made disasters.

Products are a significant number of sectors of the Russian industry competes with the products produced by other countries whose economies are growing faster than domestic due to the use of favorable structural and other advantages. Obvious is the fact that, even though Russia is very much an open market, the flow, investment to date remains insufficient for accelerating the pace of its expansion. Country in many positions lost in the issue of attracting investments to other developing markets, particularly Asia and South America. This provision creates a risk to the sustainability, competitiveness and socio-economic situation of Russia.

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An important disadvantage of this process is the obsolescence of equipment and rapid aging of the human resources employed in scientific and processing sectors. In this regard, relevant is the question of reproduction of qualified personnel. The main emphasis in the preparation of these frames it is necessary to focus on knowledge in the most popular current market specialized industries and complex manufacturing processes in such industrial fields as chemical industry, Aeronautics, mechanical engineering, which requires extensive knowledge, a high level of adaptability and flexibility.

In modern conditions, the main task of modernization of the system for monitoring and ensuring the security of industrial systems should become the evolution of policy from public policy to politics, considering the realities of the current stage of economic development, in which enhancing the effectiveness of the measures contained in it cannot be achieved by making regulations. The achievement of this goal may, in the opinion of the author into account in formulating measures to ensure the economic sustainability of the business, the complexity of functioning in the economy of industrial systems.

The essence of the modern environmental and industrial risk is associated primarily with the introduction in the production process of new technologies, the result is not always predictable, necessitating greater control of these processes by the state and, above all bodies of EMERCOM of Russia. Tools for possessory risk in this context published governmental and Ministerial regulations, technical norms and standards, which are designed to define and monitor compliance with established security levels. A key objective of these documents and of the authorities responsible for
their implementation, is the creation of conditions for linking the interests of economic sustainability of business Economics and the purposes of maximizing profits at manufacturing companies. An important aspect of development of systems of the possessory risk management in Russia is the growing number of incidents causing harm to the health of the workers, the main cause which is the failure to observe safety at work.

In modern conditions is actual creation based on the National center for crisis management of the EMERCOM of Russia system of monitoring and analysis of industrial facilities in which it is advisable to create an integrated approach to ensure economic sustainability of the business, linking together the cutting-edge projects for the control of industrial processes and operations and assess the effectiveness of implementation of new types of industrial systems. The main emphasis in the formation of this system must be done on the development of tools for the prevention of industrial accidents.

According to EMERCOM of Russia for the first half of 2017 occurred 68 man-made disasters, which killed 218 people and injured 355 people [1]. Out of this number of accidents the share of the industrial facilities accounted for 10 cases in which killed 5 people, injured 107 people [1]. These data allow us to conclude that the level of security of industrial facilities in Russia remains low. The severity of the consequences of technogenic and natural emergency situations increase.

Obviously, emergencies and accidents in manufacturing plants slow down the process of industrial development of the country, which indirectly is expressed in the long process of developing corrective measures generated by accidents faults and directly in the occurrence of limitations in activities of entire industries resulting from these events. The introduction of new technologies in manufacturing brings new security challenges, analysis and elaboration of measures for the elimination of which must be held before associated with the implementation of these technologies risk [13, 14].

Research work on the formation of a unified system of ensuring the economic sustainability of the business should be financed not only through the budgetary system of the country, this process needs to involve themselves in an industrial company. Otherwise, these investments will not bring complete results, because the process of their implementation from defining the problem to develop and implement measures to address it will have no connection with the real company.

The measures taken by the Government of the Russian Federation in the period 2016-2017 for the modernization of the system of standards in industrial production are the basis for successful improvement of mechanisms to ensure the possessory risk country.

Industrial safety is a key factor in the successful functioning of the economy and improve the business climate. Improvement of mechanisms of ensuring the economic sustainability of the business should be aimed at implementation of innovative monitoring mechanisms of production systems, greater control of the level of environmental hazard of production. The creation and development of such systems must be carried out simultaneously with the formation and development of industrial zones and clusters to be their component parts.

The next important aspect of system development to ensure economic sustainability of the business in the core manufacturing sectors of the economy should be the formation and structuring of self-regulatory programs for the possessory risk management. The main objective of these systems may be to develop sustainable, measurable objectives for improving the structure of the measures to reduce the number of technogenic emergencies and the gravity of its consequences for the economy.

The formation of such systems would accelerate growth of the industrial sector of the Russian economy, enhancing implementation of innovative technologies in the production cycle and modernization of existing industrial firms.

6. Discussion

The main task in the formation of a system of monitoring and analysis of economic sustainability of business should be to gain control of the processes of modernization of existing technological processes and possible risks associated with the introduction of new technologies in industrial production.

It is obvious that the development of the national system of ensuring the economic sustainability of the business and the modernization of existing control systems owner’s risk it is necessary to consider the existing Western experience of industrial risks and development of methodologies for the possessory risk management systems. The most significant documents of the European Union in this field is the method of "Analysis hazard and operability (HAZOP)", method, "Quantitative Risk Assessment (QRA) and risk Assessment of the working environment" [4, p. 210-211].

The use of these techniques in the development process of safety monitoring system of industrial zones and clusters should be accompanied by the development of methods that consider national and regional peculiarities of formation and functioning of industrial systems, as well as the uniqueness of natural conditions. Only under these conditions, it is possible to form an effective system of possessory risk, corresponding to the existing problems of development of industrial system, accelerate the process of modernization of manufacturing industries, to expand the range of methodologies applied evaluation of the effectiveness of public policies and to improve the quality of decisions.

The main directions of improving the system of monitoring and analysis of security of industrial areas and clusters are the following:

First, within the existing monitoring systems of EMERCOM of Russia and Rostechnadzor to form an integrated infrastructure owner’s risk, rules and regulations which must be uniform for all industry sectors. A key objective of development of this infrastructure will reduce the number of production incidents using innovative technologies and methods to prevent them.

Second, to harmonize the monitoring systems necessary for a comprehensive approach to the definition of "economic sustainability", which along with the traditional set of factors to include factors such as, occupational health and safety of workers, the tools of environmental safety, including the prevention and minimization of threats to the environment.

Third, in the framework of creating an integrated system of monitoring and analysis of possessory risk provide a mechanism for coordination of research and development in the field of ensuring and maintaining the economic sustainability of the business to accelerate the process of upgrading used in the field of equipment and systems.

Fourth, the efficiency of the integrated system of monitoring and analysis of economic sustainability of business can be achieved only with the use of tools for strategic forecasting.

7. Conclusion

For the successful implementation of these directions requires the following conditions:

- legislative consolidation of the key criteria possessory risk, which will make compliance compulsory for all industrial enterprises;
- development of a consultation system and software analysis, the activity will be aimed at the identification of the main threats to owners’ risk and the selection of innovative remediation techniques;
- increase public expenditure on financing of scientific researches related to the analysis of the sources of threats to possessory risks and search tools to troubleshoot them:
- risk assessment and management;
- development and implementation of advanced technologies for the reduction of risk;
- infrastructure security economy;
- the impact of human and organizational factors on the safety of the economy;
- study irregular risks;
- study of the specifics risks in the areas of small and medium enterprises.

It is obvious that the activities of the integrated system of monitoring and analysis of the possessory risks should be comprehensive, i.e. to cover the whole range of existing and potential threats to the sustainability of the organization and tools to eliminate them.

Consequently, the main tools of the system should be the following:

- identification of the best methods to ensure safety in specific industrial sectors, and the dissemination of these methods to other industry sectors, especially those which provide for the formation of industrial zones and clusters;
- analysis of innovation potential of the methods selected as the best to ensure the owner’s risk;
• formation of infrastructure for communication interaction of bodies and divisions of EMERCOM of Russia and RosTechnadzor;
• ensures the exchange of information and innovative developments in the field of address threats to the owners’ of risk between the sectors to identify and resolve internal difficulties and barriers of this interaction.
• organizing and maintaining the sustainability of financing from budgets of all levels monitoring and analysis of threats to economic and ownership risks;
• development or modernization of the legislative framework, state standards and regulations in economic sustainability of the business in order to improve its security.

It is obvious that the formation of the integrated system of monitoring and analysis of the possessor risks aimed at improving the management of the industrial sector of the economy. The use of the above-described mechanisms within the system to increase the efficiency of predicting the occurrence of potential threats to your organization and reduce the severity of manifestations of existing threats.

In the post-crisis environment is increasingly relevant relationship between the problem of ensuring the security and profitability of industrial products and services. These manifests itself most acutely in high-tech industries. In countries where the economy is dominated by these industries, actively developed tools to solve this problem, which can be efficiently combined with the existing principles of organization of production. Consolidation and integration of production enterprises in industrial networks and clusters also stimulate the growing interest of business and government to security issues in such history of the deposits [3, p. 34].

In addition, the monitoring and analysis of aspects of economic sustainability of business in modern conditions is directly linked to the tools of economic efficiency of production, and therefore, the instruments eliminate the major threats should be included not only in the design of the new production, but also actively applied at all stages of the project. With attention to the challenges the possessor risk should be given in the later stages of the production life cycle. The formation of the integrated system of monitoring and analysis of threats to economic stability is of importance in the structural modernization of the processing branches of the Russian economy.

In the long term, a key objective of state regulation of economic and ownership risks of Russia's special role is the transition from the traditional approach to managing safety, including the development of a regulatory framework and implementation of control measures to an innovative approach based on bathing techniques predict potential threats to the owners’ risks and formulating the most effective measures to prevent or reduce the severity of the consequences. Thus, the formation and development of an integrated system of monitoring and analysis of threats to economic sustainability of the business as well as developing principles and methods of security is a long-term goal of modernization of the mechanism of state industrial policy.

References
The data are quoted according to the website http://www.mchs.gov.ru/stats/detail.php?ID=571101