



## **Organizational Model of Regional Socio-Economic Territorial Management**

**Tatiana Y. Anopchenko<sup>1\*</sup>, Irina A. Pryadko<sup>2</sup>, Kometa T. Paytaeva<sup>3</sup>, Oksana S. Dubskaya<sup>1</sup>, Anton D. Murzin<sup>1\*</sup>**

<sup>1</sup>Department of Theory and Technology in Management, Faculty of Management, Southern Federal University, Rostov-on-Don, Russia, <sup>2</sup>Department of Economics and Management, Volgodonsk Institute of Economics, Management and Law (Branch), Southern Federal University, Volgodonsk, Russia, <sup>3</sup>Department of Economic Analysis, Faculty of Economics and Finance, Chechen State University, Grozny, Chechen Republic. \*Email: [admurzin@yandex.ru](mailto:admurzin@yandex.ru)

### **ABSTRACT**

The problem of accounting risk management of socio-economic development of territories has several aspects. Along with the relative novelty of the scientific development management, risk management tasks in industrial urbanization have not yet received sufficient methodological support. This article defined directions and tasks of captive insurance mechanism at the regional level, disclosed the peculiarities of captive insurance companies proposed mechanisms for its effective functioning. As a result, the study proposed a model of regional organization of risk management, the essence of which is to combine units monitoring organization and functional environment, to analyze the factors and assess the level of risk, as well as reference and methodological information. It is recommended to account for the industry-specific risk organizational structure of management and identify characteristics of the information flows three-component scheme of risks.

**Keywords:** Model, Regional Management, Socio-Economic Risk, Risk Management, Insurance Mechanisms

**JEL Classifications:** G22, L14, R11

### **1. INTRODUCTION**

Economic activity is inseparably linked to indetermination of socio-economic processes as well as infinite number of states and conditions forming economic decisions, due to the application of economic methods for regulation of economic relations, low organization level and strong contradictions of social, economic and political phenomena (Pike et al., 2006).

The interaction of entity at the level of territorial-regional environment under uncertainty contributes to the formation of risk, which is a leading way of uncertain environment neutralization (Alexeev and Kurlyandskaya, 2003). Uncertainty is interpreted as a lack of a final list of unambiguous and reliable outcomes of interacting events (Lai et al., 2014). This characteristic of risk is essential for the transition to sustainable socio-economic development as the formation of the long-term program of area or region development should take into consideration the

objective and subjective sources of uncertainty (Iyer et al., 2005). In this case, the goal of finding the means and methods of full overcoming factors of uncertainty is not set directly but the need to consider the most important principles of risk management in the process of selecting rational alternative versions is substantiated (Murzin, 2015). Development problems of insurance tools are highly relevant for today's Russian economy, some scientists draw attention to their direct impact on the effectiveness of national economic security (Abramov, 2007). Potential of insurance mechanisms continues to unfold in various scientific aspects: Works of Prof. Aliev et al. (2011) are dedicated to the problem of searching for the lines of new activities of regional insurance companies; solution of specific tasks of management of innovative types of business risks using insurance mechanisms are presented in the studies of Gubanov (2010); comparison of the domestic and international insurance practices in the context of risk management of industrial enterprises was conducted by Sklyarov (2011).

## 2. METHOD

Taking into consideration high efficiency of risk transfer tools and, in particular, insurance, we study the possibility of using the regional insurance structure building practice able to alleviate the damage from sudden changes in economic processes of particular areas as a result of its activity (Bawcutt, 1991).

The mechanism of managing business risks on the regional level presumes availability of regulating relations between economic process participants (Feoktistov, 2005).

Creation of such a mechanism requires:

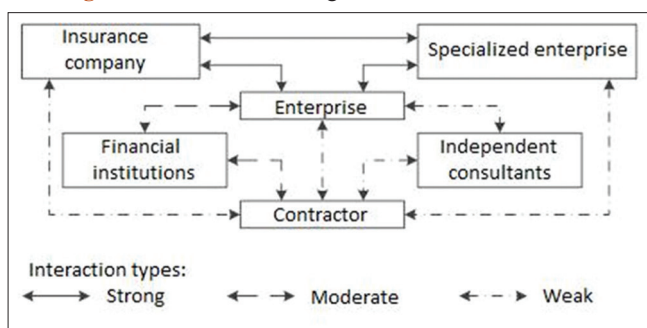
- Enterprises that operate in high-risk conditions may act as a subject of development and implementation of a regional insurance risks system;
- Insurance companies which are main participants of insurance mechanism that contributes to complex risk insurance tasks' solutions;
- Contractors – Partner or broker organizations which may be somehow else connected to enterprises;
- Specialized firms operating in the insurance sector and leading pre-insurance examination activities, the settlement of insurance claims, the rendering of advice;
- Independent juridical and financial consultants, whose activity is in many ways similar to that of specialized enterprises but lies exclusively within legal-financial consulting domain;
- Financial institutions (banks, investment companies, state and budgetary enterprises and funds), which operate to finance the consequences of the offensive damage, get bank guarantees or guarantees of the state, etc.

Figure 1 shows relationships between regional insurance mechanism participants considering strength of their relations. It is obvious that the leading role in the mechanism is carried out by, firstly, the enterprise itself and, secondly, insurance company and specialized institutions, secondary functions of which belong to contractors, financial institutions and independent consultants.

The analysis of the current market situation and presented interaction scheme show that the role of the insurance company, although significant (Prokopjeva, 2015), is still quite limited in comparison with the existing potential, which is made conditional upon the following reasons:

1. Long experience of interaction between enterprises and insurance agents calls for the creation of a reserve fund used

**Figure 1:** The scheme of regional insurance mechanism



by the participants of economic relations to cover losses caused by natural disasters. In other words, that mechanism is predominantly closed, i.e., managing subjects' needs in business area of risk insurance are satisfied by subjects themselves.

- The current closed system of insurance business risks is a simplified model of the traditional insurance mechanism, as enterprises (risk subjects) are its only members.
  - The development of this system may occur along the path of separation of functions to create a reserve (insurance) fund, which can be performed not by themselves entrepreneurs, but by specialized market participants - insurance companies. Thus, the separation of the insurer from a business subject has historical roots, the economic nature of which is due to the need for specialization and business insurers (Iyer et al., 2005).
2. Division of insurance and non-insurance risks is one of the main reasons for seclusion of insurers in the risk insurance system. In practice, this reason is expressed in insurer's low interest in minimizing the risks of the enterprise, which are not studied easily, and characterized by ambiguous statistics, bad formalization, high display rate and other similar qualities. These factors serve as a cause for refusal to insure such risks. Decision on insuring risk of any kind is based on criteria of quantitative measurement of possible economic damage size and the probability of insurance cases coming to existence.
  3. There is a conflict of interests of economic subjects and insurance companies existing. Economic foundation of insurance is the need to manage insurance risk and financial compensation of actual damage. However, considering the interaction with a particular insurer now reveals a fundamentally opposing nature of expectations: The insurance company is interested in cooperation with the enterprise to minimize the probability or provide complete prevention. At the same time, the insurer benefits from the risk existence in the field of business in general.
    - The existence of this contradiction creates conditions for inner restrictions of enterprises and insurance companies relations, because within individual interaction risk negative effects of one of the subject relations become a positive factor for the existence of the other. Thus, in the existing system of business risk insurance there is a steady contradiction of economic subjects' and insurance companies' interests. At the global level, this contradiction is expressed in the high interest of the insurer in the presence of risk and related adverse effects (Zhuravin, 2005), whereas the majority of the enterprises, on the other hand, tend to reduce the probability of possible losses, as it inevitably associated with the violation of the production process and additional costs. At the level of individual relationships an inverse interest is clear: The insurance company benefits from the rarest manifestation of risk or its non-existence, because the effects of the risk can be expressed in actual damage to the company and, as a consequence, in direct losses to the insurance company.
  4. Insurance companies are mass insurance-oriented, which also does not contribute to overcoming the contradictions of interaction with enterprises. Insurance companies pursue

long-term goals of sustainable profitable development by forming the largest possible stock of homogeneous insurance risks of insurance objects. Also, insurers are interested in the universalization of their insurance stock, the provision of insurance services on a wide range of risks and the list of insurance objects.

Enumerated circumstances contribute to the diversification of insurance resources, which, in turn, leads to higher prices for insurance services and makes the interaction with individual enterprises unattractive against the background of a huge number of customers.

### 3. RESULTS

In order to improve and increase the efficiency of the existing business insurance mechanism the following possible areas of cooperation between enterprises and the insurance company at the regional level are offered:

1. To improve the quality of existing insurance products through the detailing insurable risks.
  - Common knowledge that with the development of managing mechanisms and possibilities of the insurance market, insurance companies include in their list of services a growing number of business risks: Insurance of potential losses as a result of the forced interruption of production activities; financing and non-payment risk insurance; liability insurance. At the moment among the most promising are the following types of insurance: Innovative and project risks insurance, E-commerce risk insurance, leasing transactions risk insurance (Table 1). The rapid growth of business necessitates constant expansion of proposing insurance

**Table 1: Proposed range of insurance services**

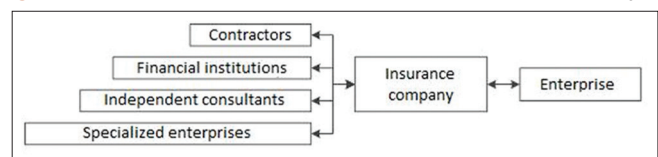
Direction	Content of insurance risks
Financial	Credit insurance: Credit default risk, the responsibility for unpaid credits, untimely interest payment on credit, consumer credit, commercial credits, deposits Indirect risks insurance: The probability of income loss or unexpected expenses, temporary profits, indirect damages Exchange risk insurance: Defaults on transactions, brokerage fee, securities transactions Financial risks insurance: Financial investments, financial guarantees, municipal bonds
Commercial	Investment insurance Value of income (profit) insurance
Credit	Mortgage or consumer credits insurance Commercial credits insurance Bank credits insurance Export credit insurance
Other	External business environment risks insurance Innovation projects risks insurance Information sphere risks insurance Leasing transactions risks insurance E-commerce risks insurance

2. The introduction of insurance companies' practice consulting services relating to the methods and approaches which results into minimization of the risks.
3. Implementation of other participants' certain functions in the system of business risks insurance by insurance companies.
  - We also assume that the insurance company is able to perform some of the functions of financial institutions in the business risks insurance system. The insurer can actively participate in the enterprise contractors' relationship that implements risk management procedures. The role of the insurance company in this case can be manifested in the legal review of commercial transactions, which may be based on an extensive information database of the standard transactions practice (Figure 2).
4. Creation of a captive insurance company
  - The conducted analysis of the current practice of relations between manufacturing enterprises and captive insurance companies in the Russian conditions, which are characterized by a fragmented insurance market, the existence of large enterprises, financial-industrial groups, holdings (Leppänen, 2012), allows us to draw the following conclusion: The development of captive insurance business has good prospects, there is a tendency among managing subjects towards creating subsidiary branches providing risks insurance (Logvinova, 2010).

The proposed mechanism of captive insurance, in our opinion, should help to create the following benefits:

1. A captive insurance company, in comparison with the universal insurer, is adapted to a more effective implementation of the individual parts of functionality the risk insurance participants and a better implementation of the advisory function, being a full participant in the insurance market (Berkowitz, 2003):
  - Realizing the goals set by the parent insurance company, the captive company is actively cooperating with universal insurance companies and has the necessary level of skills and experience to provide required insurance services;
  - The captive company performs the functions of specialized enterprises more effectively due to a significant expansion of volumes, compared with the universal insurer, underwriting activities, risk placement, settlement of insurance claims, that is a direct obligation of functional and integral part of the insurance company services;
  - The captive insurance company intensifies advisory role as it gains experience of functions of independent consultants and specialized companies;

**Figure 2: The scheme of functions concentration of insurance subjects**



- The risk subject gets a captive insurance company as an effective mechanism for the impact on the insurance market, which is able to protect the interests of the company at a high level due to increased specialization in the typical insurance operations.

Thus, on the one hand, the intermediary character dominates in the captive insurance company activities, on the other hand, responsibility for management results significantly increases, which, in its turn, enhances the effectiveness and the management stage of control and risk insurance as a whole (Strauss, 2014).

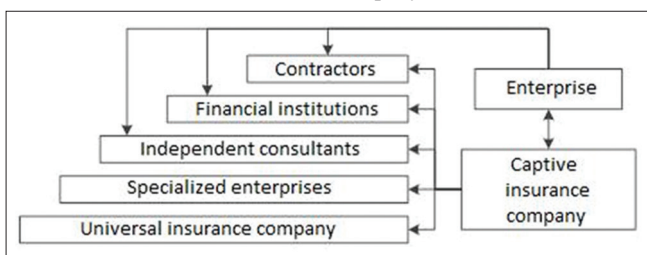
2. The subject of risk has a complete set of instruments of legal control over captive insurance company’s activities, which allows linking its development strategy with strategic plans of the parent company (Weterings, 2014):
  - The subsidiary captive company is interested in immediate satisfaction of parent company’s needs in insurance of arising risks;
  - Availability of insurance services is of primary importance for solving tasks of the insurance company’s operative strategy.

Based on the regarded advantages of interaction of risk subject with captive insurance company, the following upgraded scheme of cooperation may be suggested (Figure 3).

The suggested mechanism of business risks insurance shows that in using captive insurance system part of the functions is assumed by the insurance company, but most of the functions are performed by the enterprise itself. Consequently, the process of risk management by functions related to captive insurance company consists of effective management of insurance company. That, in its turn, causes the need to coordinate strategic goals of the enterprise’s development of - the subject of risk and the insurance company for the effective implementation of risk.

Summarizing the aforementioned arguments we can draw a conclusion that it is possible to get significant strategic advantages when perfecting interaction between risk subjects and insurance companies based on the suggested mechanism of the captive insurance system. Captive insurance company is able to implement the functions of risk management system’s subjects more effectively while simultaneously keeping the high quality of insurance coverage, optimum insurance expenditures and efficient response to individual inquiries on risk insurance made by parent company (Picard and Pinquet, 2013).

**Figure 3:** The mechanism of risk insurance carried out by the captive insurance company



The main problem of the formation and development of the insurance services market in the business risks area at the regional level is the problem of choosing a reliable insurer, since the vast majority of existing regional enterprises are not able to fully assume the risks of hazardous industries on urban or regional scale (Rusetskaya, 2010). Reinsurance or joint risk insurance with leading federal or foreign insurers helps the leak of the regional financial resources (Martinez-Vazquez et al., 2006).

The following mechanisms can be proposed as available and effective solutions of these problems:

1. Pooling the leading regional and major national insurance companies, which have their branch network in the region;
2. Creating a large regional insurance company (RIC) on a base of joining efforts and financial resources of regional administration, regional banks and budget-forming regional enterprises. The goal of that company would be solving problems in regional insurance market.

Considering the advantages and disadvantages of the proposed insurance mechanism, the creation of a RIC, a strategic functioning perspective of which is to form a single regional insurance institution on its basis, seems the most objective.

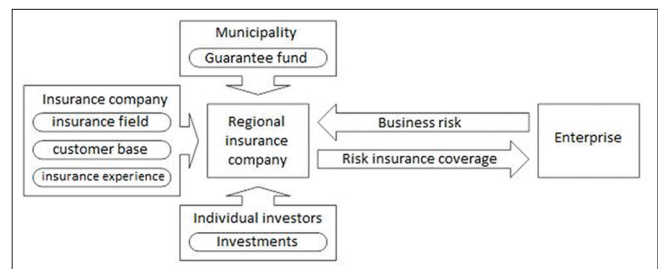
Prerequisites for creating such a regional insurance mechanism are (Figure 4):

- Mostly unbeneficial economic-legal conditions for business development;
- Insufficient amount of actively functioning objects of insurance market infrastructure;
- Poor diversification of insurance services;
- Lack of self-sufficient risk insurance subjects;
- Credibility to the insurance companies;
- Lack of state support for regional insurance;
- The problem of choosing an effective RIC;
- Unorganized mechanism of interaction between the subjects of risk and insurance company in the insurance risks system.

Long-range merging of created RIC with individual insurers pursues goals of acquiring a fabricated insurance field and standing customer base of regional market, as well as those of reception of existing functioning experience on local market.

The main goal of creating a RIC is assignment of wide-range insurance services in business risks area and provision of full-fledged insurance of the regional enterprises.

**Figure 4:** The mechanism of the regional insurance company functioning



In accordance with the intended purpose, RIC performs the following functions: (Hagen and Hammond, 1998).

- Analyses and takes statistical account of regional insurance market indices;
- Performs functions of independent evaluation of financial state;
- Provides informational-consulting support for risk subjects;
- Grants a financial support for socially significant projects of innovative businesses' development.

Creation of a RIC may contribute to a partial solution of current problems of the region vital activity (Zhengkui and Jian, 2012):

- Business expenses are decreased due to non-payment of insurance fee, which leads up to growth of business and investment activity in the region;
- Release of investment resources promotes reduction of unemployment and creation of new workplaces, which, in its turn, positively influences social tension;
- Financial resources are being taken out of shadow sector of regional economy, which increases budget tax income;
- General investment climate of the region is improved due to increased investment and business activity;
- Competitive financial base provides an ability to invest capital in the most effective projects;
- Partial administration participation in financing of socially significant projects leads to saving budget expenditure.

Thus, at this moment the most promising instrument of business risk management is insurance. The suggested mechanism of regional risk management and its insurance scheme allow increasing regional business activity and providing the most comfortable conditions for transferring economy to stable development.

On condition of the suggested possibility of determining probable losses in the process of diagnosing the enterprise's risks, as well as determining the significance of each of the identified risks in the process of identifying them in business for the foreseeable future, this stage of risk management is reflected in the construction and analysis of the risk profile of the particular enterprise activity.

Structure of enterprise's activity risk profile includes a list of risks typical of the enterprise (risks range), a scheme of specific risks (ranged) according to the objects and enterprise subsystems (risks map), possibility of risk events (risk possibility) and an evaluation of financial consequences of risk realization (risk cost). Consequently, enterprise's risk profile can be presented as a three-dimensional matrix, the axis of which are risk spectrum, risk map and risk possibility (Abramov, 2007), and their intersection reflects the cost of a specific business risk (Figure 5).

Risk management system, like any other system of management, can be divided into subsystems: Management object (managed subsystem) and management subject (managing subsystem) (Feoktistov, 2005). Management object in this case is a risk as well as risk investments and economic relations of management subjects during risk event realization. Management subject is a specialized community of people which implements a purposeful

influence on management object with the help of various methods and techniques (Figure 6).

The main goal of risk management is seeking actions alternatives, which define an optimal combination of income and risks of a particular kind of business activity (Figure 7).

The essence of the presented organizational model consists in concentration of organization monitoring and functional environment blocks, factor analysis and risk level evaluation as well as reference-normative and methodical information.

At the input of the risk management system information describing the current state of internal and external environment of the risk subject of is analyzed.

Analysis of the external environment assumes characteristic of its most important interrelated elements: Legislative (regulatory), socio-economic, scientific, technical, financial-credit, professional qualification, social and political, monetary, fiscal, environmental, inflation, educational, informational and social-psychological component.

Then information from Block I is analyzed in Block II with the help of certain methods and techniques. A result of this analysis is a definition of a practical content of potentially possible unfavorable events, which may appear in realization of a specific strategic decision in conditions of the considered enterprise. Also

Figure 5: Risk profile of the enterprise

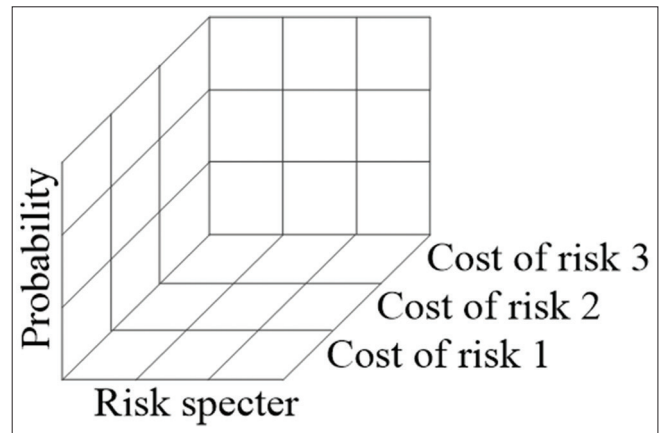
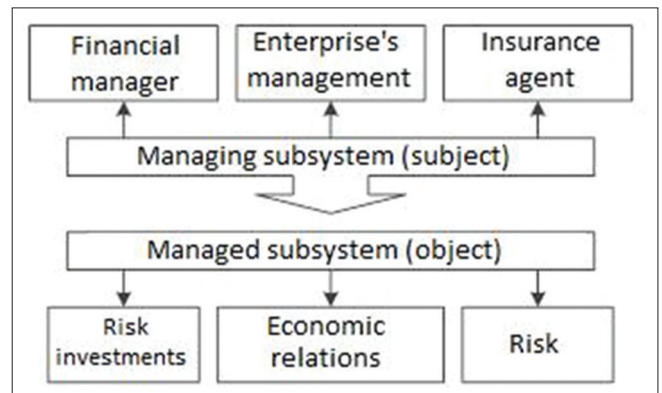
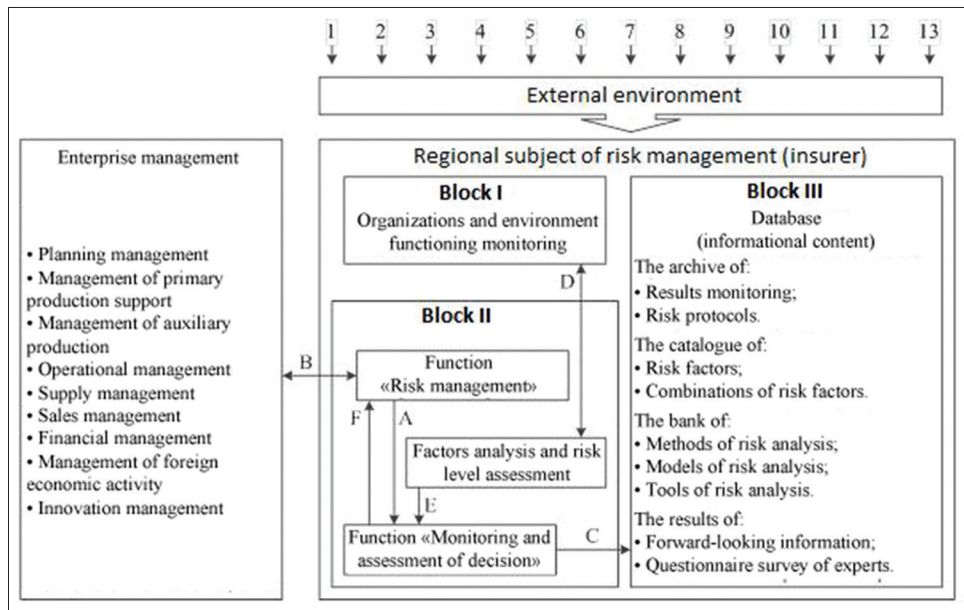


Figure 6: Structural model of risk management



**Figure 7:** The organizational model of regional risk management

in this block the list of situations, risk factors and combinations of events characterizing the indetermination of decisions' events is identified.

Based on quantitative and qualitative parameters chosen beforehand a new value of risk level (Point E) is established and compared to acceptable risk value (Point A) with the help of alternative methods. If risk level value is within the boundaries of acceptable risk, the control procedure is concluded with drawing up a risk protocol, which is transferred to Block III. In case of discrepancy between the measured level of risk and acceptable limits the procedure of analysis and assessment of risks in the Block II is repeated (Point D). If the unsatisfying cycle results analysis and risk assessment reoccur, then it is recommended to reject the original proposal and change the initial conditions of management decisions (Point F).

Performance of all functions of risk management system requires concentration of needed information in Block III.

The right choice of a set of measures contributing to prevention and minimization of risk is of much importance in effective risk management process. In the world practice of risk management many methods, differing in realization mechanisms and application place, find their use (Abramov, 2007). But an analysis of the formed risk management practice shows that employed methods have, as a rule, characteristic specifics and are effective in individual practical conditions, or they are variations of widely applied methods. In this regard universal risk management methods that have a wide area of effective use are quite relevant for the practical use.

The main goal of risk management is the adoption and implementation of solutions contributing to minimization of the adverse effects of random factors affecting the results of economic activity, as well as improving the efficiency of business through the rationalization of risk management. As a result of achieving assigned goals, a stable position of the enterprise in the market,

decrease in the crises probability, reduction of time for overcoming financial difficulties, the involvement of modern management tools are ensured.

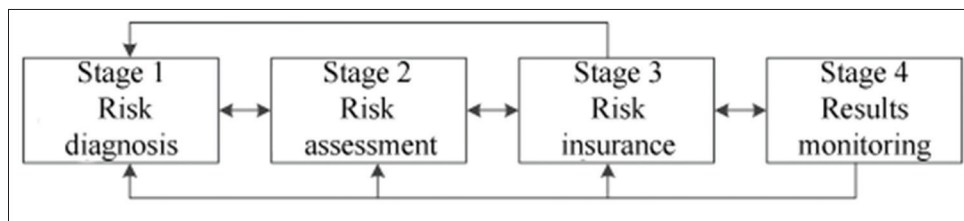
Despite the use of the general management principles in the risk management process, risk management has its own specific features at each level of management. Fundamental tasks of risk management on the enterprise are achieved in the development process and in implementation of special strategic development program, which contributes to the success of business in a dynamic business environment.

Formation of the enterprise's risk management program (RMP) is made conditional to the basic principles of risk management: Informed risk decision; analysis of risk transfer possibilities; definition of the enterprise's financial strategy; the time factor; degree of control over risk; efficiency of risk management; coordination of financial capacity of the enterprise; the independence of risk management; comparability of acceptable risk level with profitability of the enterprise.

In general form risk management process includes diagnosis, identification, measurement and targeted impact on the perception level of objects of potential losses. The process at each enterprise is specified in accordance with the general principles of management that necessitates the inclusion of independent stages of risk diagnosis, evaluation and insurance, as well as results-based monitoring.

It can be noted that the shown stages must not be necessarily implemented sequentially, some of them can be executed in parallel, there is also the opportunity to return to the previous stage, etc. In this regard, it is important to establish a logical relationship between the stages of RMP (Figure 8).

At the initial stage of risk management the primordial information on the risks is systematized, the identification of risk, which acts

**Figure 8:** Scheme of the logical relations between the risk management program formation stages

as a basis for the following actions on RMP development, is held. At this stage the purpose and nature of risk capital investments are studied, the following indicators are determined:

- Probability of adverse event;
- Financial stability and solvency;
- Political and economic situation in the country;
- State of rival products and services;
- Insurance conditions, etc.

Undoubtedly, the collection and processing of initial information, regardless of its specific content, play an important role for effective risk management. However, during the RMP formation completeness and quality of the initial information is of great importance. It is conditioned by the probability of appearing new risk factors in the absence of complete and reliable information, as well as the adoption of unjustified administrative decisions under conditions of incomplete information, which can be a source of additional financial losses and reduction the profits of the enterprise. The information quality is subjected to the following standards:

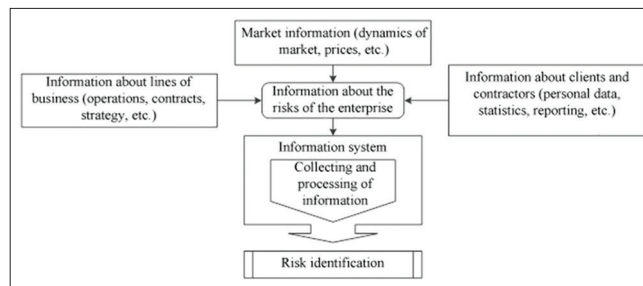
- The reliability (correctness) - Proximity to the source and accuracy of interpretation;
- Objectivity - An adequate reflection of reality;
- Unambiguity - Avoiding of double interpretation;
- Order - The minimum number of transmission links from the source to the final user;
- Completeness - Exhaustive character and conformity with the objectives of collection;
- Relevance - Matching the requirements;
- Urgency - Significance and modern character;
- The cost of obtaining.

The use of appropriate information systems, as well as individual information technology, is a factor that allows meeting these requirements in the process of collecting and processing the initial information (Figure 9).

Among the advantages of the collection and processing of initial information system share the following aspects:

- The possibility of rapid risk classification and prioritization of certain tasks to minimize it;
- Consistency of the analysis process and administrative data; the relations between the results of risk analysis and data of marketing, financial and economic services;
- The possibility of a risk assessment using different methods and different levels of manifestation etc.

The magnitude of the risk and the quality of the initial information on which its assessment is made, have close relations. Neoclassical

**Figure 9:** Information system and the major information flows

risk theory establishes a direct dependence of the quality of management decisions on the amount of reliable and objective initial information (Ioda and Kuznetsova, 2003). According to this theory, of multiple alternatives of decision-making, characterized by equal yield, you should choose to implement a solution with the lowest probability of the risk. According to this theory, you should choose to implement a solution with the lowest probability of the risk, given the choice of multiple alternatives of decision-making, characterized by equal yield. Therefore, in case of selecting from several equally profitable options, based on information of higher quality, clear relations between the level of risk and initial data for its assessment are established, i.e., the minimum risk probability is the maximum amount of high-quality initial information.

## 4. DISCUSSION

Materials discussed during research roundtables in the Southern Federal University, in which identified and taken into account the following remarks. It is offered to evaluate the initial information quality using the matrix (Table 2), with extensive capabilities of visual analysis of the informational field of risk. The columns reflect the information quality for each characteristic; the quality is assessed in direct proportion: A quality level corresponds to score from 1 to 10. As a result of this analysis, overall quality of the initial information, which is the arithmetic mean of mark estimates, is determined.

The process of information collecting and processing for the risk level assessment must ensure an optimal ratio of the completeness and quality of the initial data, on the one hand, and the cost of producing, on the other. In other words, it is necessary to maintain a reasonable balance of the information completeness and the economic costs of its acquisition. Therefore, in some cases, from the viewpoint of economic expediency the usage of incomplete information for risk assessment is allowed, as the time and cost to obtain the missing information can surpass its practical usefulness. In this regard, the process of analyzing the initial data must be

**Table 2: Matrix scheme of initial information assessment (example)**

Information characteristic	Quality criteria									
	1	2	3	4	5	6	7	8	9	10
Reliability					√					
Objectivity									√	
Unambiguity							√			
Order			√							
Completeness							√			
Relevance									√	
Urgency								√		
Final quality assessment						7.14				

accompanied by an assessment of potential losses from the use of incomplete time.

Note that the initial identification procedure covers all types of risks inherent in the enterprise as whole and certain aspects of its operations. Therefore, in the analysis process you should take into account not only the general categories of enterprise risks, but also pay attention to aspects of its industry-specific activities, organizational structure of management and characteristics of information flows system.

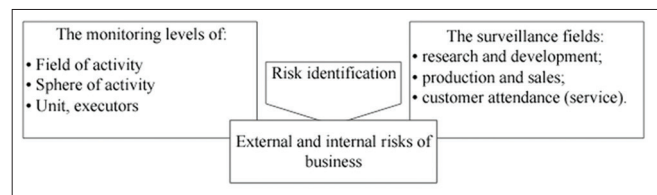
Taking into consideration certain requirements, the following three-component scheme of identifying the enterprise risks is proposed (Figure 10).

The procedure of immediate risk assessment is based on the reference standards, which are the criteria of comparing the current and future risks, as well as evaluating the effectiveness of the enterprise risk management system as a whole. In other words, as a result of the risk assessment a judgment about the welfare of the risk profile of the enterprise and the value of its component risks is formed.

Risk assessment methods include qualitative and quantitative techniques. Qualitative methods of risk assessment are descriptive in nature and generally include the following steps:

- Identification and classification of the possible risks of the enterprise;
- Identification of sources, causes and stages of the risks realization, identifying potential areas of their formation;
- Study of the factors that determine the level of risk;
- Assessment of the possible consequences of the identified risks;
- Development of a program of reduction and/or compensating of risks;
- Evaluation of the economic feasibility of the proposed measures.

The results of qualitative risk assessment are the initial data of quantitative analysis, which allows calculating the value of an individual business risk and the risk level of the enterprise as a whole. This stage assumes determining the numerical values of a particular risk event probability and its consequences, the implementation of quantitative assessment of the risk level and the establishment of overall risk level acceptable in the current

**Figure 10: Scheme of risk identification in three perspectives**

situation. That is quantitative risk assessment includes not only the definition of the possible consequences of management decisions, but also estimates the probability of their occurrence.

During the analysis of the existing methodical approaches to business risk assessment the following disadvantages were identified (Tikhomirov et al., 2003).

The methods used for assessing objective and subjective probabilities of adverse consequences of the analyzed risk situations implementation are based on the information about the final amount of outcomes and consequences of decisions, as well as the possible states of the environment. The large number of random factors and unpredictable state of the external and internal environment at an enterprise is a significant disadvantage of the methods of probability theory, suggesting quantitative assessment of the business risk level, which makes it impossible to apply them correctly in the actual economic situation.

Statistical methods, which allow assessment of the enterprise risks as a whole, enable analysis of the dynamics of its financial results in the nearest retrospective period. Another disadvantage of the statistical methods is the demand for a large number of observations on the state of the researched object for a long retrospective period, since the accuracy of risk assessment depends directly on the amount of the collected statistical information. However, in some cases, combination of several techniques allows improving the accuracy and reliability of the final result of risk analysis. Analytical methods suggesting the analysis of the object sensitivity to the external and internal environment changes are not comprehensive and do not conclusively determine the probability of realization of alternative opportunities and projects. Methodical approach to risk realization scenario analysis is characterized by a high level of experts' subjectivity.

Imitational modeling methods are characterized by the objective requirements for quantitative restrictions of model factors, which affect the risk implementation, and by the need to set the numerical values of the risk event probabilities. Furthermore, while using these methods, the possibility of formalizing various processes should be taken into account, because not all elements of economic system can be adequately formalized.

“Decision tree” methods, which enable to simulate the problem of choosing management solutions, are characterized by a high degree of labor intensity and subjectivism, as they allow taking into account only those actions and outcomes, which are to be carried out or which, according to the analysts, can be realized. The degree of external environment influence on management decisions and economic activity is not considered at all.



Heuristic methods and expert assessment techniques are widely used in conditions of partial or total lack of complete and reliable information about the analyzed phenomenon or process; they are based on experience and intuition of experts. Therefore, because of subjectivity of the assessments made, as well as the difficulties of carrying out and processing the results of experts' surveys, these methods do not provide a clear assessment of the risk level.

## 5. CONCLUSION

Thus, the majority of quantitative approaches to the business risk assessment are poorly effective in the rapidly changing business environment, caused by the market managing conditions. Most of the considered methods of risk analysis and assessment are poorly adapted to account for non-market events and phenomena such as political instability, ecological crises and natural disasters, which can make significant changes in the economy and cause drastic changes of business environment.

As a result of the study, we show the characteristic of modern mechanism business risk management of as a subject of study and the scientifically based necessity to transform the role of insurance companies in the regional system of management entrepreneurial risks in terms of the concentration of insurance functions and the formation of captive insurance persons. Based on the analysis of works by the domestic and foreign researchers who studied the basics of the functional mechanism of insurance of risks of captive insurance companies, the advantages and disadvantages of the suggested insurance mechanism were examined, and the organizational model of regional risk management was developed. The main point of this model is to combine monitoring units of organization and functional environment, analysis of the factors and evaluation the level of risk, as well as regulatory and methodological information. Scientific result of the research is the enterprise's risk management in collaboration with the regional captive insurance company.

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## REFERENCES

- Abramov, V.Y. (2007), *Insurance: Theory and Practice*. Moscow: Wolters Kluwer Russia.
- Alexeev, M., Kurlyandskaya, G. (2003), Fiscal federalism and incentives in a Russian region. *Journal of Comparative Economics*, 31(1), 20-23.
- Aliev, B.H., Vagabova, A.S., Kadieva, R.A. (2011), Marketing aspects of the development of regional insurance markets in Russia. *Finance and Credit*, 15, 15-19.
- Bawcutt, P.A. (1991), *Captive Insurance Companies. Establishment, Operation and Management*. Cambridge: Woodhead-Faulkner.
- Berkowitz, S. (2003), Is there a captive insurance company in your future? *Healthplan*, 44(3), 74-78.
- Feoktistov, N.A. (2005), *Formation of methods of diagnosis of regional insurance markets (Doctoral Thesis)*. Khabarovsk: Khabarovsk State Academy of Economics and Law; 191.
- Gubanov, R.S. (2010), Management of innovative enterprise risk through insurance. *Financial Analytics: Problems and Solutions*, 14(38), 44-47.
- Hagen, J.V., Hammond, G.W. (1998), Regional insurance against asymmetric shocks: An empirical study for the European Community. *The Manchester School*, 66(3), 331-353.
- Ioda, E.V., Kuznetsov, V.B. (2003), *Enterprise Risk Management: Theory and Practice of Insurance Risks*. Tambov: TSTU.
- Iyer, S., Kitson, M., Toh, B. (2005), Social capital, economic growth and regional development. *Regional Studies*, 39(8), 1015-1040.
- Ioda, E.V., Kuznetsov, V.B. (2003), *Enterprise Risk Management: Theory and Practice of Insurance Risks*. Tambov: TSTU.
- Lai, J., Zhang, L., Duffield, C., Aye, L. (2014), Economic risk analysis for sustainable urban development: Validation of framework and decision support technique. *Desalination and Water Treatment*, 52(4-6), 1109-1121.
- Leppänen, S. (2012), Inter-regional insurance and redistribution - A non-parametric application to Russia. *Comparative Economic Studies*, 54(3), 633-660.
- Logvinova, I.L. (2010), *Mutual insurance as a method of creating insurance products in the Russian economy*. Moscow: Ankil, 186.
- Martinez-Vazquez, J., Timofeev, A., Boex, J. (2006), *Reforming Regional-local Finance in Russia*. Washington, DC: World Bank Publications.
- Murzin, A.D. (2015), Algorithmization of ecologo-economic risk-management in Urban areas. *Asian Social Science*, 11(9), 312-319.
- Picard, P., Pinquet, J. (2013), Optimal risk financing in large corporations through insurance captives. *The Geneva Risk and Insurance Review*, 38(1), 48-86.
- Pike, A., Pose, A.R., Tomaney, J. (2006), *Local and Regional Development*. New York: Routledge.
- Prokopjeva, E.L. (2015), Life insurance in Russia: Features of regional development. *Economy of Region*, 1(1), 223-233.
- Rusetskaya, A.E. (2010), The development of insurance as a tool to improve effective system of economic security of Russia. *Regional Economy: Theory and Practice*, 6(141), 40-48.
- Sklyarov, V.V. (2011), Comparative analysis of the Russian and the international system of insurance services as a method of risk management of industrial enterprises. *International Accounting*, 6(156), 37-44.
- Strauss, P. (2014), Captive insurance companies. *The Journal of Medical Practice Management: MPM*, 30(3), 208-210.
- Tikhomirov, N.P., Potravny, I.M., Tikhomirova, T.M. (2003), *Methods of analysis and management of ecological and economic risks*. Moscow: UNITI-DANA.
- Tikhomirov, N.P., Potravny, I.M., Tikhomirova, T.M. (2003), *Methods of analysis and management of ecological and economic risks*. Moscow: UNITI-DANA.
- Weterings, W. (2014), (Re) Insurance captives, efficiency and moral hazard. An attractive manner of risk financing and risk management for companies in certain circumstances. *Risk Governance and Control: Financial Markets and Institutions*, 4(1), 7-15.
- Zhengkui, L., Jian, W. (2012), Research on regional insurance industry's social responsibility evaluation model and its application. *Advances in Information Sciences & Service Sciences*, 4(1), 388-396.
- Zhuravin, S.G. (2005), The global market for captive insurance companies. *Financial Business*, 2, 68-70.