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SUSTAINABILITY STRATEGY AND RISK MANAGEMENT

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Abstract

Manufacturing companies in the Kazakhstan market introduce new developments in the field of applied technologies and materials. With the use of each new substance and technology in this area, the risks also increase. This increases the importance of risk management as part of a sustainability strategy and requires more experience and knowledge. Thus, the purpose of the dissertation research is to develop proposals for ensuring the sustainability of industrial companies based on the use of risk management. It is necessary to gain knowledge of best practices in the industry to provide further research on this issue that can improve risk management strategies and the sustainability list. This dissertation examines the modern theory of risk management and sustainability strategy, which highlights trends in the development of the industrial sector.

Three Kazakhstani companies operating in the industrial oil and gas environment were selected to study various ways to combat risks and trends in the country's sustainability. Those responsible for sustainability risk in companies were interviewed using semi-structured interviews, and additional information was collected from various sources such as annual reports, web pages, and other documents. This dissertation is a high-quality research project and applies an analytical approach to the purpose and nature of the phenomena under consideration.

The results obtained showed various tools for applying corporate risk management and its relationship with risk. The results showed the importance of tools used to solve the problems of building a sustainability strategy in companies, which are used in addition to the processes of dealing with uncertainties that may arise if these processes are not implemented. From the point of view of generalizing the results obtained, more companies can still be added, we can also assume a study in the future of the company's maturity and make conclusions more accurate. However, after analyzing the operations received from the company, the proposed model for improving the success of risk management measures and sustainability strategies can be used and applied in other companies operating in this industry.

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Introduction

Sustainability as a subsystem of the economy and its management is an important factor underlying the sustainability strategy of Kazakhstan national economy, since industrial enterprises initially have a significant impact on all elements of the country sustainability and deserve priority study when developing this problem.

Currently, there are a number of patterns in the growth of the structural pace, institutional and market changes in the economy at both the national and international levels. This leads to the emergence and growth of a complex risks' huge number that significantly affect the sustainability of the enterprise. As risk factors increase their impact on the efficiency of an industrial, enterprise increases taking into account various factors of main and auxiliary activities. At the same time, company managers must devote significant financial, human and intellectual resources to finding new methods and means to improve the effectiveness of sustainability management.

To date, there is no clear understanding of the risk essence in economics, which is explained by the multidimensional nature of this phenomenon and its practically ignored in real production, economic and managerial activities. In addition, risk is a complex concept that has many different and sometimes opposite real reasons. This makes it possible that there are many definitions of risk from different points of view. The following scientists-economists Kosdauletova R.Ye., Sadykhanova D.A., Park Y., Harris A., Tchankova L. and others made a significant contribution to the study of issues related to the study of the risk management role in ensuring sustainability and competitive advantage of the company. However, a number of issues remain open and there is still room for further elaboration.

In this dissertation, we propose to consider a model for ensuring the stability of an enterprise at all risk management levels, presented based on a classification of internal factors, which will allow us to build new approaches to risk management in such companies in the modern market. This should help enterprises achieve a higher level of business activity, if their goals are easily integrated at the local, regional, national or global levels in the direction of their sustainability, taking into account the specifics of oil and gas industry that significantly affects the socio-environmental sphere.

Relevance of the research topic. In advanced administration hypothesis, issues of key administration and models of investigation and decision-making in particular operational issues of companies` working have been completely created. They work well in stable, established conditions. However, in crisis situations or during a stagnation period, companies` activities are accompanied by increased instability and risks, and their economic stability decreases. To minimize threats and risks, it is vital to modernize the key framework and operational administration, rummage around for shapes and strategies to guarantee the companies economic stability. The proposal substantiates the achievability of actualizing such a campaign to guarantee the companies economic stability as risk management. The hazard administration instrument permits us to decipher operational data into innovation for making not as it were operational, but moreover strategic decisions. It makes it possible to predict trends in the required level development of an industrial company`s economic stability, based on the risks analysis accompanying the industrial company activities.

In many European countries, the company`s management is increasingly focused on monitoring and preventing crisis situations, threats and risks. The question is raised about the mandatory introduction of risk management as a special approach to managing the company, which consists in anticipating and reducing the negative consequences of the expected performance uncertainty. When summing up the annual results of companies` activities, the explanatory note to the balance sheet recommends assessing the risks of the company`s future development. Such analysis is performed by the company`s risk management service.

Many domestic companies were not able to work in a stable way in the crisis, to maintain market niches, to maintain production at the modern scientific and technical level. Overcoming crisis situations by domestic industrial companies is related to ensuring their economic stability. Therefore, it becomes relevant to substantiate the nature, conditions and mechanisms for achieving this stability.

The purpose of the dissertation research is to develop proposals for ensuring the industrial companies sustainability based on the use of risk management.

In accordance with the goal, **the following tasks** are set:

- determine the concept content of the company sustainability in modern conditions, identify the functional components of its achievement in the conditions of stagnation and crisis;
- identify key factors that affect the companies' sustainability at the stage of stagnation and crisis;
- determine the current level of the companies economic stability in the context of global competition;
- systematize and classify economic risks that hinder the companies sustainability that produce pipe products, to determine the level of various risks manifestation;
- critically study and characterize the application of risk management in the companies' activities, determine the reasons for restraining risk management as a tool to reduce economic risks in ensuring sustainability of companies;
- substantiate the main directions of using risk management in companies, develop an approach to optimizing the assessment of economic sustainability and develop recommendations for its improvement based on the use of risk management technologies and the creation of specialized risk management services.

This dissertation paper defines the content of the company's sustainability, which is manifested in the company's ability to maintain market positions and maintain the operation planned mode without administrative interference from the state, despite external and internal threats and risks, and create a basis for further development. It is proved that the main danger of reducing the companies' sustainability, which leads to the greatest losses and economic losses, is the lack of accounting and unreliability of risk assessment of strategic, as well as risks in the socio-economic and managerial spheres. Taking into account only traditional risk factors significantly limits the ability to determine the real level of sustainability.

Literature review

Concept of the sustainability strategy

According to the definition of Francois Perrou, a French economist (1903, 1987), economic sustainability corresponds to "a steady increase over one or more long periods in the measure of a

nation's total net product in real terms"¹. It measures the wealth produced in a territory over a year and its evolution from year to year, so it gives little information about the standard of living and even less about the quality of life. Sustainability can contribute to development, but it is not always so, and we are talking about growth without development, when the wealth production is not accompanied by an improvement in living conditions. Strictly speaking, sustainability only describes the process of increasing economic production. On the other hand, Perroux defines development as follows: "a combination of mental and social changes in a population that make it able to cumulatively and sustainably increase its real total product"¹.

Even if development involves growth, it cannot be reduced to growth. Growth certainly represents the concept predominant dimension, but it is not sufficient to account for the other aspects that development involves. Growth is quantitative and leads to an increase in economic values, which are considered as one of the many components of a complex development phenomenon. Even if growth remains a prerequisite for any development effort, since any increase in living standards or social well-being necessarily involves an increase in output and an increase in income, it is important to clarify that development is much more than growth². Development, in addition to the growth concept, which is quantitative and measurable, qualitative ideas are postulated, which, in addition, avoid all dimensions and go beyond the economic analysis scope. This implies an increase in social welfare, changes in structures and, ultimately, changes in society as a whole. This happens, as Fagerström et al. point out, through urbanization, industrialization, literacy, and learning, and by merging these combinations create a more efficient system (by accumulating wealth) in which human needs are better met³.

The World Bank, for its part, defines sustainability as a combination of the following characteristics: self-sustaining and sustainable growth, structural changes in production methods, i.e. a reduction in dependence on materials, raw materials and goods and services production, technological

¹ Perroux, F., 1983, page 118, 123.

² Russell, Sh.L., Thomson, I., 2009, p. 228.

³ Fagerström, A., Hartwig, F., Cunningham, G., 2017, 48.

catch-up, social, political and institutional modernization and significant improvement of people's living conditions⁴.

For Lacy et al. sustainability is economic growth plus improvement in the distribution of material well-being in low income. This includes improving nutrition, health care and education for families, reducing infant mortality, and increasing their lives dignity. He continues, speaking more technically, “economic development refers to all the complex effects of growth, whether intended or not, beneficial, harmful or neutral: changes in the types of goods produced, the production methods, and the employment structure”⁵. It is also used to refer to changes in the rate of population growth, foreign trade and urbanization, as well as in the wealth distribution. In the same sense, Kunyazova et al. defines sustainability as follows: sustainability is a set of observed changes in the economic and social system that cause growth⁶. Therefore, sustainability is a qualitative action that includes changes in demographic, social and mental structures that contribute to and support economic growth. Thus, this leads to an improvement in the well-being of the entire population. “Sustainability is a transformation of cultural structures that allows not only qualitative action, but also changes in demographic, social and mental structures that contribute to and accompany economic growth”⁸.

Thus, the United Nations Development Programme (UNDP) defines human development as “expanding the range of opportunities available to men”⁷, while improving the quality of a person's individual and social life. This definition has three consequences:

- First, the development concept should be expanded, in addition to increasing per capita income, to meet basic human needs: health, employment, education, and life quality. Under this approach, economic growth and human development do not contradict each other are considered complementary: one allows us to free up the financial resources needed to implement social policy, the other is to improve the human factor quality necessary for economic growth.

⁴ The World Bank, Global Program on Sustainability, <https://www.worldbank.org/en/programs/global-program-on-sustainability/overview>

⁵ Ласу, Р., Найвард, Р., 2011, р. 351.

⁶ Куныазова, С.К., Каримбергенова, М.К., Фиц, Д., 2018, <https://articlekz.com/kk/article/29340>

⁷ HDRO Outreach, What is Human Development? <http://hdr.undp.org/en/content/what-human-development>

- Then it must give development participation and democratic content. The freedoms expansion and the deepening of a collective responsibility sense seen as necessary conditions for human development: the private initiative liberation, as well as the strengthening of social protection support for people who cannot support themselves.
- Finally, it is necessary to take into account not only the satisfaction of immediate individual needs, but also respect for collective interests, including the future generations interests, which should not be put at risk by natural resources overexploitation.

The concept of sustainability aims at integrating social problems. As Aimagambetov and Assanova note, with regard to economic decisions, its implementation requires compliance with various general principles, which we can compare with the main conditions for its success⁸. These are nothing more than the basic principles that govern life in society and relations between states and nations. It aims to align the social, environmental, economic and cultural aspects of development with the transversal principle: democracy and stakeholder participation. This applies to important social and political issues: arguing, democratically developing and implementing a new development model. Among the sustainability principles, we cite the following: justice and social solidarity. The principle of equity is one of the principles that define the sustainability concept. It is a question of meeting the urgent needs of the human community in the present and future at the local and global level by reducing inequality between people, with respect for their culture⁹.

The principle of justice has two aspects concerning time and space:

- Intergenerational equality: looking to the future, which includes the rights and responsibilities of each generation towards future generations, in particular the moral right to conserve the planet's natural and cultural resources.

⁸ Aimagambetov, Ye.B., Assanova, M.A, 2014, p. 119.

⁹ Elliott, J., 2013, p. 267.

- Intergenerational equality: in its spatial dimension, it is about meeting the current generation's needs, which implies solidarity between the richest and the poorest, and the preservation of other species and the environment by humans¹⁰.

For practical purposes, sustainability as an economic category should be quantified in the form of relevant indicators. One of the main tasks of studying the enterprise stability problem is to solve a number of methodological issues related to determining the composition of these indicators and their calculation. Depending on the classification feature, all indicators are divided into groups in table 1.

Table 1

Classification scheme for sustainability indicators

Classification feature	Indicators of sustainability
1. According to the hierarchy level and calculation object	<ul style="list-style-type: none"> • macro-level: <ul style="list-style-type: none"> – general economic – international, on the world market • meso-level (industry-specific) • micro-level (for the enterprise)
2. According to the funding source	<ul style="list-style-type: none"> • external • internal
3. According to the action time	<ul style="list-style-type: none"> • reporting • current: <ul style="list-style-type: none"> – actual – normative • planned • prognostic
4. According to the evaluation criteria	<ul style="list-style-type: none"> • quality • quantitative
5. According to the units	<ul style="list-style-type: none"> • value • natural • dimensionless
6. According to the relativity degree	<ul style="list-style-type: none"> • absolute • relative • structural
7. According to the enlargement degree	<ul style="list-style-type: none"> • generalized <ul style="list-style-type: none"> – integral – local • team

¹⁰ Nurdavletova, S.M., <http://gg-old.otgroup.kz/ru/publication/view/5754>

	<ul style="list-style-type: none"> • single
8. According to the formation nature	<ul style="list-style-type: none"> • economic • financial • market
9. According to the user groups	<ul style="list-style-type: none"> • world economy • national economy • firm
10. According to the intended purpose	<ul style="list-style-type: none"> • calculation and analytical • practical

It should be noted that sustainability should be the main companies' strategic goal. At the same time, in modern conditions, in small and medium-sized companies, no one considers sustainability and does not put it as a priority direction of development. In this regard, this study suggests using a system of indicators to assess the level of an industrial company sustainability¹¹ (table 2).

Table 2

System of indicators for assessing the company's sustainability level

Financial and economic stability	Market stability	Technological stability	Innovative sustainability
<ul style="list-style-type: none"> • revenue • profit • profitability of production and sales • financial stability coefficient • financial independence ratio 	<ul style="list-style-type: none"> • market share • competitiveness of products • level of competition in the market • demand • image 	<ul style="list-style-type: none"> • professional level • the level of compliance of technological solutions with modern trends • progressive technologies coefficient • staff stability coefficient 	<ul style="list-style-type: none"> • the cost of innovation • the rate of product updates • number of patents

At the same time, during the implementation of the developed strategy for sustainability, the company may face the following barriers:

¹¹ "Sustainable Development Innovation Briefs, Issue 9", UN.org

- lack of the sustainability strategy regular monitoring and its implementation plan. The presence of this barrier may be due to the lack of a clear understanding of this strategy purpose, since the relevance of sustainability issues has increased in recent decades;
- inability of developers to convey the essence of the strategy to others (as a result – unmotivated staff and the strategy unsuccessful implementation)¹²;
- inability to follow a strategic plan;
- savings on the implementation of the company’s sustainability strategy. The priority of financial indicators growth as the main goal of the enterprise creates resource constraints for the implementation of this strategy;
- management barriers, which are characterized by the majority of senior managers being engaged in solving operational issues, rather than strategic planning, which should take at least 20-25% of the working time¹³;
- established corporate culture. The sustainability strategy involves not only the implementation of activities to achieve goals within the enterprise, but also includes an understanding by employees of the value they bring to the company, staff, society, and the environment, and directs them to the sustainability of the individual¹⁴;
- lack of knowledge and competence in the field of sustainability. Currently, the relevance of the enterprise and society sustainability is growing, while the number of specialists and companies consultants in this area is small.

The relationship between sustainability and business

In recent years, we have seen the rise of speeches, reports and books on sustainability in companies or corporate social responsibility. These presentations reflect the growing companies’ interest to invest in the social and environmental spheres. Their primary responsibility is to create economic value, but they can also contribute to achieving social goals and protecting the environment,

¹² “Sustainable Development Goals 2016-2030: Easier Stated Than Achieved – IIID”. 2016-08-21.

¹³ Ruiz-Real, J., Uribe-Toril, J., Gázquez-Abad, J., Pablo Valenciano, J. de, 2019, p. 14.

¹⁴ Wen-Dong, L., Tian, D., Wei, Y., Xi, R., 2018, p. 3641.

in addition to public regulations and incentives, by integrating social responsibility as a real strategic investment. Integrating this concept into their strategies is a necessity for achieving sustainable human development, knowing that modern production methods and consumption do not guarantee today.

Kassymzhanova and Dutta write that sustainability is achieved when economic development is subject to the three economic efficiency principles, social justice and environmental responsibility¹⁵. These three issues can be defined in terms of profit, human, and the planet. At the company level, sustainability is often defined as achieving a balanced triple balance, a way to manage risks, liabilities, and opportunities in the financial, social, and environmental areas. Therefore, a sustainable business creates economic value, healthy ecosystems, and strong communities. These companies are experiencing external crises because they are closely linked to healthy economic, social, and environmental systems¹⁶.

Commitment to a sustainability approach is not an easy decision for a company. Rather, this journey is riddled with a series of decisions that must take into account this development principles. According to Elliott, for the company, using a sustainability approach means:

- providing funds to improve our overall performance: environmental, social and economic;
- limit the risks;
- taking into account the views of all stakeholders, namely individuals or groups that have implications for the company: customers, suppliers, employees, shareholders, local authorities, civil society, NGOs, associations¹⁰.

Commitment to sustainability means developing a corporate social responsibility (CSR) policy. The concept of “social” is broader and includes an environmental component.

The report of the International Standards Organization (ISO) advisory group on CSR, published on April 30, 2004, notes that there is no generally accepted definition, but a list of materials that fall under CSR¹⁷.

¹⁵ Kassymzhanova, N.A., Dutta, M., 2016, p. 201.

¹⁶ Owens, S., 2004, p. 112.

¹⁷ ISO Advisory Group on Social Responsibility, Working Report on Social Responsibility, April 30, 2004, http://iso26000.jsa.or.jp/files/doc/2004/sagreport_eng.pdf

For the World Business Council for Sustainable Development (WBCSD), CSR corresponds to “the commitment of companies to promote sustainable economic development by working with employees, their families, local communities, and society at large to improve their life quality”¹⁸.

The definition given by the European Commission on CSR of July 2001 is brief and does not accurately define the areas covered by this social responsibility: “the corporate social responsibility concept essentially means that companies decide on their own initiative to help improve society and make the environment cleaner”¹⁹.

Why use a corporate social responsibility approach? First, as Long et al. write, because of CSR is as a risk management tool²⁰. The fact that a company better considers the impact of its activities on society allows it to respond to stated or expected pressures and prevent risks that could jeopardize its future or its profitability any time. Reputational risk is now a key issue. Product boycotts are becoming more common, with significant consequences for businesses.

This risk-based approach is particularly sensitive for companies. Financiers understand this in terms of increasing insurance premiums or reducing access to investment funds. Among the potential risks that the company is exposed to, Sciarelli et al. highlight:

- Management risks (shareholders counteraction, conflict with stakeholders).
- Reputational risks from a commercial point of view (boycott, damage to the brand image) and from the point of view of human resources.
- Financial risks (high insurance premium, limited access to investments).
- Economic risks (higher production costs, compensation costs, disposal costs)²¹.

Second, according to Vishwanathan et al. CSR is an economic asset. This discourse about predicting risks can easily be transformed into a discourse about predicting opportunities: instead of

¹⁸ The World Business Council for Sustainable Development, How we drive sustainable development, <https://www.wbcSD.org/Programs/Cities-and-Mobility/Transforming-Mobility/SiMPLify>

¹⁹ Commission of the European Communities, Green Paper, Promoting a European framework for Corporate Social Responsibility, 2001, [https://www.europarl.europa.eu/meetdocs/committees/deve/20020122/com\(2001\)366_en.pdf](https://www.europarl.europa.eu/meetdocs/committees/deve/20020122/com(2001)366_en.pdf)

²⁰ Long, W., Li, Sh., Wu, H., Song, X., 2019, p. 528.

²¹ Sciarelli, M., Tani, M., Landi G., Turriziani, L., 2019, p. 845.

talking about the talent leakage risk, we can use the opportunity for better recruitment in the labor market, for example, better branding²². True CSR integration requires a shift from these risky approaches to more positive approaches to using opportunities.

During this period of the CSR beginning concept development, the implementation of the social responsibility approach makes it possible to stand out among competitors and can become a real market advantage. Companies committed to CSR are attentive to changes in their economic and social environment and quickly identify new trends as well as development opportunities.

View this presentation of CSR as an economic asset should, however, in perspective: the reality is not so simple, otherwise all companies without exception will seek such advantages. The necessary investments, whose long-term returns are only likely, remain significant and are often overlooked in the literature on the subject. As noted by Rakotomavo M., “a trade-off between economic profitability (especially in the short term) and the sustainable development goals integration is constantly necessary”²³.

Third, as Kukeyeva and Abdukhalyk write, CSR is a belief of leaders²⁴. A crucial factor that may explain why some companies participate seems to be related to the company directors’ role and their management style. In the analysis of corporate social responsibility strategies and practices, they highlight the resources wealth that a company can find in its own culture and in the knowledge of its profession, as it seeks to integrate CSR principles into its strategy. However, they notes that quite a few companies are actually following this path. Finding the resources necessary for CSR implementation at the profession core and corporate culture requires decisive actions on the part of managers.

Forth, according Çapraz, B., CSR approach is under duress. Companies have seen pressure to make them appear and multiply new social issues awareness²⁵. These loads differ in form and nature, and they belong to different categories of actors, among which we can count:

²² Vishwanathan, P., Oosterhout, H.J. van, Heugens, P.M.A.R., Duran, P., Essen, M., 2019, p. 323.

²³ Rakotomavo, M., 2012, p. 202.

²⁴ Kukeyeva, F.T., Abdukhalyk, Zh.R., 2014, p. 201.

²⁵ Çapraz, B., 2020, p. 241.

1. Associations and non-governmental organizations that have changed their strategy from purely critical activity to search for and directly mobilize companies around social issues.
2. Consumers who are sensitive to non-governmental organizations and constant discussions in the media and are increasingly concerned about the product production conditions, this leads companies to compete for prices or labels such as “ethics on the label”. This pressure promotes the idea of “ethical quality” and / or public goods, which inclusion will be an important social issue.
3. Investors who tend to express their thoughts more often than before at general meetings and demand accountability for the management social aspects. In addition to the classic shareholders, there are now so-called “socially responsible” investors who seek to further promote the adoption of social responsibility behaviors and sustainability strategies by the companies they adhere to²⁷.

Risk management as a factor of sustainability

The risk management history is closely related to insurance and therefore to risk. From the eighteenth century to the early 1940s, risk management developed in the corporate world, but mainly in the banking and insurance industries, including using actuarial technologies based on many probabilistic and statistical concepts. Not all risks are well controlled. A truly modern study of risk management began after World War II in 1955-1964²⁶. Long associated with the use of the insurance market to protect individuals, companies with various losses related to accidents, risk management experienced a boom related to costs and within the insurance scope, which contributed to the search for alternative solutions. Snider H. W observed at the time that there was no book on risk management, and no university offered courses on the subject²⁷. Mehr and Hedgers (1963) published the first two academic books and their content concerned pure risk management, which excluded financial risks.

²⁶ Dionne, G., 2013, p.151.

²⁷ Snider, W. H., 1979, p. 219.

The use of derivatives as financial risk management tools began in 1970-1980s and developed very quickly in the 1980s. This is also in the 1980s, when companies accelerated financial risk management. International risk management began in the 1990s²⁸.

Chapman et al. write, “in the corporate world, the risk management function has a trend that for several decades has been captured by the finance world, insurance, and internal audit”²⁹. Today, risk management covers the entire company, regardless of its size, industry, scope, and location.

The first definition of risk management that we offer is the definition of COSO II (Committee of Sponsoring Organization of the Treadway Commission):

Risk and process management is performed by the board of directors, the general directorate, management and all employees of the organization. It is taken into account when developing the strategy, as well as in all activities of the organization. It is designed to identify potential events that may affect the organization, as well as to manage risks within its risk propensity. It aims to provide reasonable assurance that the organization’s goals are being met. This mechanism involves identifying potential events that may affect the organization, and maintaining its exposure to risk in accordance with the organization’s risk requirements³⁰.

This definition seems to shed light on a very broad aspect of risk management. This other regulatory definition, which in the same spirit, is the definition provided by the financial markets authority. The financial market authority defines risk management as “the company’s dynamic device defined and implemented under its responsibility. Risk management includes a set of tools, behaviors, procedures and actions adapted to the each company’s characteristics that allow managers to maintain risks at a level acceptable to society”³¹. This statement is the regulatory authority insists on the deployment device.

²⁸ Chapman, Ch., Ward, S., 2003, p. 99.

²⁹ Chapman, Ch., Ward, S., 1996, p. 219.

³⁰ COSO, 2004, Enterprise Risk Management – Integrated Framework, <https://www.coso.org/Documents/COSO-ERM-Executive-Summary.pdf>

³¹ Financial Markets Authority: Efficiency, effectiveness and baseline review, <https://www.fma.govt.nz/news-and-resources/reports-and-papers/fma-efficiency-effectiveness-and-baseline-review/>

Other authors also gave their own approaches to risk management. We can give this definition of Stulz. According to the author, risk management is “a set of policies, strategies, devices, control and monitoring and human, financial and material resources implemented by an organization, organizational activities to identify, limit and control risks directly or indirectly related to its activities”³². This definition, this time, defines the different stages of the risk management process. This definition coincides with the definition of Tchankova L., who sees it as “a process applied throughout a program that combines risk identification-assessment and control activities, where assessment is presented as a process used to assign values for the probability of detectability and risks consequences”³³.

A conceptual approach to risk management can also be implemented based on the person profession who oversees it. For us, this will not be about defining criteria for the professional and intellectual fitness of the profession, but rather identifying specific indicators that allow us to better understand what is happening outside of risk management. We will find answers elements with the question “How to define a risk manager functions?”. Detailed information is provided by Kallenberg, where he presents the basics of the function:

1. Identification – understanding and controlling all the company’s risks related to the company’s management, department managers, process and / or department where the risk may affect.
2. Definition – implementation and management of the company’s identification, evaluation, monitoring, tracking, and risk management tools.
3. The definition guarantor, documentation, updating of the proper application and completeness of risk management procedures applied in the organization.
4. Active and critical participation in crisis management.
5. Participation in any corporate decision that may lead to the potential emergence of new risks or deterioration of the company’s risk management level.

³² Stulz, R.M., 1996, p. 12.

³³ Tchankova, L., 2002, p. 293.

6. Legislative, legal, and prudential regulation that may cast doubt on the company's sustainability³⁴.

After defining risk management in various approaches, it is important to measure its real utility for the company through the actual goals sought (point 1). The risk management deployment is based on preliminary requisitions and the grounds for its effectiveness (point 2).

Point 1: the goals are numerous and varied for the company. However, the common basis for all the goals attributed to risk management is business sustainability and, therefore, value creation. This value creation includes all the company's stakeholders. How? First, risk management, according to Hegde et al., aims to create a corporate reference frame to effectively counter risk and uncertainty. This created structure is of paramount importance for a consistent and controlled the entire system deployment. Moreover, this will lead to a strong convergence of all, especially human resources around a common goal or vision³⁵.

In this initiative, Nakau K. tells us that risk management will provide security, strategic goals in the device materializes indicators. The author pushes his thinking by defining another, no less real goal, which is to adapt the company to changes in corporate governance and market requirements. It emphasizes the company's compliance with laws and regulations³⁶.

Other and equally important goals can be listed including:

- Draw up a plan and set goals to eliminate or reduce the enterprise risk, in order to ensure the preparation and programs implementation and control, financing and security to achieve these goals, in order to optimize the cost of these processing measures³⁷.
- Periodic review of these programs results by identifying gaps how to decide on any measures that can be reversed these deviations and apply³⁸.
- Reducing volatility in sectors that are not vital to the organization.

³⁴ Kallenberg, K., 2007, p. 1011.

³⁵ Hegde, J., Utne, I.B., Schjøberg, I., 2016, p. 447.

³⁶ Nakau, K., 2004, p. 692.

³⁷ Schweizer, P.J., 2019, DOI: 10.1080/13669877.2019.1687574

³⁸ Kácha, O., Ruggeri, K., 2019, p. 587.

- Develop and maintain the employees' potential and the knowledge capital of the organization.
- Operational efficiency optimization.

Point 2: basic requirements for risk management. Deploying a risk management device requires prerequisites, i.e., conditions or a set of requirements that must be met before it is created. This is about defining these conditions or a set of necessary conditions. One of the first preconditions remains the directorate-general commitment. Indeed, the directorate-general should implement risk management policies. This requirement has been withdrawn as a priority (risk management reference system) for the general director involvement and the organization executive directors. It is up to the CEO to take responsibility for the organization through strategic leadership, leadership roles, and various actors' accountability³⁹.

As another requirement, a risk management culture will be created. This culture should be based on sustainable communication with all stakeholders without exception. This risk culture will enable each subject, at its periphery, to participate in the risks assessment and be a force of proposals for more operational decisions. This will lead to the financial and human resources allocation. This foundation identified by the risk management system, which advocates allocating appropriate resources for training and increasing risk sensitivity among all stakeholders⁴⁰. Other prerequisites include:

- Select a proven methodological framework in terms of the metric languages.
- Risk universe and priority setting.
- To offer a stable function of a risk manager from the positioning point of view, and perimeter.
- Search for organizational stability.
- Define a clear and proven deployment plan⁴³.

Risks in the economy

Further, the risk study in economic behavior made a great contribution to the risk study in economic behavior. The German sociologist Niklas Luhmann in his work "Risk: a sociological theory"

³⁹ Du, J., Bai, T., Chen, S., 2019, p. 307.

⁴⁰ Randolph, R.V., Alexander, B.N., Debicki, B.J., Zajkowski, R., 2019, p. 321.

made a special contribution to the development of the risk phenomenon sociological interpretation in the economic sense⁴¹. Alexander K., when studying the modernization processes, identified the structural elements of society, the transformation of which generates risks⁴².

In Kazakh science and practice, economic risk was almost not studied in the 20s. Except that, the production concept and economic risk was mentioned in some legal acts. The first domestic research on economic risk appeared in the late 80s – early 90's. In Kazakh social philosophy and sociology, the most significant studies on economic risk are those undertaken by Sadykhanova, D.A.,⁴³ and Isaev T.A.⁴⁴.

In general, in the current economic theory, risk refers to the probability of possible loss or damage due to the influence of both subjective and objective factors. It is assumed that it is necessary and sufficient to have two values: the mathematical expectation and the mean square deviation, for quantitative risk assessment, which can be obtained by statistical processing of a number of parameter values under study. If these values are absent, most economists indicate uncertainty.

According to the definition given by economists, the damage probability is important for identifying risk, and it does not matter whether it occurs because of the subject economic action or because of a natural disaster⁴⁵. However, there is a question about the relationship between the risk and danger concepts.

There is a need for fundamentally new philosophical and methodological approaches and solutions, the basis of which is formed by a discourse defined by such categories as “regularity” and “uncertainty”.

Modern theoretical, methodological and epistemological aspects of the risk scientific concept covered in the work of Yuntao, G., Suike, L., Sijun, B.⁴⁶. Here we consider the theory and methodology of risk management at the enterprise level under the conditions of implementing an innovation strategy.

⁴¹ Luhmann, N., 2017, p. 114.

⁴² Alexander, K., 1992, p. 15.

⁴³ Sadykhanova, D.A., 2015, p. 325.

⁴⁴ Исаев, Т.А., 2011, p. 291.

⁴⁵ Hansen, S.F., Tickner, J.A., 2008, p. 477.

⁴⁶ Yuntao, G., Suike, L., Sijun, B., 2011, p. 214.

A multi-level enterprise risk indicator is proposed, which includes the macrorisk characteristics, mesorisk, and microrisk as a new risk management tool. Where events develop unambiguously and inevitably, there is no risk even if they are adverse events. There is no risk if the company is satisfied with any scenario, despite their seemingly random nature. There are also formulated the following conditions for the risk appearance in the enterprise innovative functioning:

- there is more than one option for an innovative solution or method for implementing an innovative solution, action, or development of events;
- variants of innovative solutions, methods of innovative solutions implementation or events development have different usefulness for the decision-maker;
- it is unpredictable and it is not known in advance which scenario will be implemented⁴⁹.

Risk is understood as the favorable and adverse consequences probability that may occur when implementing the chosen alternative solution under uncertainty conditions.

Risk – an event that has the probability and consequences of changes in the company's performance (worsens or improves) taking into account factors of the company's internal and external environment, changes due to management decisions and regardless of it⁴⁷.

In the cluster approach, the following types of risks can be identified:

- business risk – the risk of such a possibility that the company will have common problems. This type of risk is determined by changes in demand, raw material prices, and technology obsolescence;
- liquidity risk – the probability that assets will not be able to be sold quickly;
- default risk – the risk that the company will not be able to fulfill its officially given promises to pay its debt obligations;
- market risk – the risk caused by changes in stock prices due to significant fluctuations in the stock market;

⁴⁷ Bessette, D.L., Wilson, R.S., Arvai, J.L., 2019, DOI: 10.1080/13669877.2019.1569107

- interest rate risk – changes in the assets value, interest rates, and changes in the money and capital markets conditions⁴⁸.

Unexpected changes in consumer prices will reduce the investor's real return on investment. The type of risk is determined by its coefficient. The following types of cluster risks can be singled out separately:

- risks of cluster development;
- socio-economic risks;
- legislative risk;
- technical and technological;
- information risks, etc⁴⁹.

In the cluster approach to management, the risk component identification is an important element of modern economic science. Risks identification and classification allows us to take into account their effect in the development of management decisions and increase their effectiveness.

In the economy, risks are an important part of the strategic planning implementation, project management and regulation of the territory socio-economic development. For the most part, investment risks imply risks that are associated with monetary resources, securities, currency, real estate prices, and so on, which sets the main direction in case of forecasting the situation development and taking measures to eliminate these risks and situations leading to them⁵⁰.

According to the statistical method, “the risk degree is the probability of loss, as well as the amount of possible damage”, first⁵¹. The economic situation uncertainty forces the entrepreneur to take the risk. The uncertainty of the economic situation caused by factors: lack of information completeness, randomness, and opposition. For example, these factors make the Republic of Kazakhstan less attractive for investment.

⁴⁸ Hansen, S.F., Krauss, M.K. von, Tickner, J.A., 2008, p. 425.

⁴⁹ Filipsson, M., Ljunggren, L., Öberg, T., 2014, p. 328.

⁵⁰ Deng, J., Zhou, J., 2009, p. 545.

⁵¹ Hua, Z., Ji-dong, S., Xin, L., Li-guo, S., 2006, p. 1700.

Due to the specificity of investment activity, it is necessary to note the risks that are typical for managing the investment policy of regions and enterprises. According to the manifestation forms, the following types of investment risks are distinguished:

- real investment risks;
- financial investment risks;
- inflation risk;
- deflationary risk;
- market risk;
- operational investment risk;
- functional investment risk⁵².

In the Central Kazakhstan region, risk management in the state investment policy is based on a risk-based approach and takes into account potentially economically dangerous risks that are of particular importance in the current economic conditions at the time of 2019.

In the economic literature and in practice, there are currently different and contradictory approaches to the risk concept, to risk management and to determining the uncertainty level. Some authors use the achievements of economic and mathematical modeling, while others reject the practice of using theoretical abstractions in creating mathematical models in favor of real management. This contradiction, according to Cagnin et. al., is eliminated if we distinguish the areas of these approaches use⁵³.

The traditional risk management described in the literature is based on mathematical methods and models according to Harris A. These methodology followers do not use the concept of uncertainty in their theory, but create it on the assumption of deterministic development of the economic system⁵⁴.

⁵² Park, Y., 2010, p. 43.

⁵³ Cagnin, F., Oliveira, M., Simon, A., Helleno, A., Vendramini, M., 2016, p. 493.

⁵⁴ Harris, A., 2000, p. 144.

The main representatives of the other school were Renn, Lucas et al., who promoted the ideas of deductive constructions and refused to abstract from the surrounding reality. They moved to the study of economics using exclusively mathematical models⁵⁵.

Cagnin et al., consider the second approach to be more reasonable, since uncertainty is only the source of a probable risk event, and probability allows us to characterize not only the riskiness measure, but also favorability⁵⁶. For this reason, the uncertainty and probability concepts should not be equated with the risk concept.

The risk management model itself, at the processes level neither that occur at enterprises, nor at the economic entity level in general, can be based unambiguously on mathematical models and the probability mathematical assessment of any events occurrence. This is impossible because at this level, the laws that operate within the framework of the theory of large numbers do not always manifest themselves.

Riskiness characterizes by the losses probability and their magnitude. It assumes that the prospective riskiness and effectiveness can be quantified conditionally, since the cause-and-effect relationships between technical (technological), social, economic and other factors do not always lend themselves to a clear mathematization⁵⁶.

The risk management theory is sufficiently developed and is often based on probability theory. In this case, probability theory is applicable only within the scope of the large numbers theory and within a conditionally finite number of homogeneous events. For this reason, it can be effectively used at the level of the world, national, regional and sectoral economies. Because of the cause-and-effect relationships, it is proposed to use a “possibilistic” approach within a separate company, rather than a probabilistic one⁵⁷.

⁵⁵ Renn, O., Lucas, K., Haas, A., Jaeger, C., 2019, p. 409.

⁵⁶ Edelstein, M.R., 2004, p. 241.

⁵⁷ Jia, X., 2019, p. 68.

Risk and risk management requires building a certain management model with a clear definition of the qualitative characteristics of this model elements and the relationships nature between the elements.

Therefore, an adequate model should allow minimizing, and ideally would completely eliminate the probability of certain events occurrence that could lead to risks (losses) or minimize the risks themselves, in conditions where it is not possible to influence the risk events. Such modeling is associated with additional costs, one-time and current⁵⁸. One-time costs may be due to the need to create a specific organizational or structural management model, with the technological base formation, with the marketing package development, etc. Current – with the raw materials quality, with the form and amount of remuneration for employees of the education and qualifications given level.

At the same time, all intra-company model’s elements must be in interaction with elements of the enterprise’s meso level (table 3)⁵⁹.

Table 3

Elements of the company’s risk management model

Risk zones	Model elements		
	Organization	Structure	Behavior
Investment sphere	+	+	+
Productions	+	+	+
Sale sphere	+	+	+

In many cases, this approach allows us to eliminate the element of randomness in risk management at the business entity level. There is a direct relationship between the risk level dynamics and the profitability dynamics, namely: the higher the average return on an operation, the greater the risk associated with it. It is almost impossible to increase income without increasing risk or reduce risk without reducing income.

⁵⁸ Burkov, V.N., Burkova, I.V., Amelina, K.E., Yu, A.D., Goroshko, I.V., 2018, p. 3.

⁵⁹ Mittal, R., Sinha, N., Singh, A., 2008, p. 1438.

The new approaches development to minimize risks should be based not only on traditional methods of preventing random events, but also use the latest achievements in the field of flow processes research, fuzzy set theory, IT technologies, etc⁶⁰.

Thus, based on the latest literature data analysis, the risk management key position in the economic capitalization conditions identified and the tasks for developing new methodological approaches in this area are noted.

Methodology

The methodology used in this study are based on empirical research such as data collection, interview and analysis. The theoretical part of the dissertation research was conducted using the bibliometric method of data collection. The choice of these methodologies is justified by the fact that they will help to understand the situation of sustainability and risk management of industrial enterprises more clearly, and based on this data analysis will help to build the most appropriate risk management model for achieving companies sustainability. Indeed, especially industrial companies represent a huge environment in the economy of Kazakhstan due to their significant contribution to the national economy, which is a major contribution at the national level in key sectors.

The author of this dissertation research puts forward the following hypotheses – it is assumed that:

1. there is a relationship between the level of sustainability and performance indicators of the company;
2. sustainability of the company includes all areas and cares not only about the environment, but also about the company's employees;
3. sustainability is directly related to risk management;
4. the lower the risk rate, the higher the company's sustainability.

⁶⁰ Mukhtarova, K. S., Shayedenov, Z.A., 2015), p. 103.

The following research questions are addressed in this dissertation:

1. What are the main features and challenges for integrating a sustainability perspective into risk management?
2. What are the ways to achieve sustainability through risk management?

While trying to answer these hypothesis questions, the main contribution of this dissertation is a comprehensive overview and analysis of the current state and the challenges in the example of Kazakhstani oil and gas companies that in part are due to inherent properties of sustainability risks and in part due to research gaps and lack of knowledge.

For these reasons, as the purpose of this study and for checking hypotheses the industrial companies in Kazakhstan was selected, such as PetroKazakhstan, Tengizchevroil, KazTransOil.

To conduct our research, we have collected an extensive amount of data from various sources, both domestic and foreign authors. We also conducted interviews with employees of the above-mentioned companies to improve understanding of their strategies for sustainability and risk management. In addition, a data collection tool intended for businesses, since it is a method of individual standardized surveys consisting of questions series presented in a logical order and its use is part of the educational logic with a descriptive vocation.

In the questionnaire, we have diversified the questions so that all axes of the subject fit in a way that makes the task easier for respondents. The questionnaire consists of 10 questions divided into three parts: the first part is devoted to identifying the company (activity sector, type, legal structure), the second part we looked at how companies understand the sustainability concept, and the last part we asked questions about strategies for integrating sustainability in companies based on risk management.

The main difficulties encountered in data collection are: there is a noticeable lack of works devoted to the research subject; the unavailability of certain company directors; the spatial spread of the surveyed companies' seats, which requires a lot of time to move.

Data analysis

Analysis of sustainability of industrial companies in Kazakhstan

In modern practice, economic and mathematical methods of evaluating phenomena are becoming more widespread. With their help, we can get a quantitative characteristic and find numerical criteria for the phenomenon under study. However, it is very difficult to measure such a multi-faceted concept as a company's sustainability within the framework of a mathematical approach, if only because it is extremely difficult to quantify the each factor value that has a positive or negative impact on the company's sustainability. It is even more difficult to obtain an integral assessment of the company's sustainability, given the heterogeneous factors influence. In addition, most importantly, the very characteristics of factors that affect the company sustainability are subjective, depending on the views, preferences, and experts qualifications who evaluate the factors, as well as their place in the company's management system.

In assessing the company sustainability state, a systematic approach is needed that would allow taking into account the full range of factors that both hinder and contribute to improving the companies sustainability. We can evaluate the current state of the company sustainability from the perspective of a systematic approach by analyzing the characteristics of factors individual groups that hinder or contribute to the company's sustainability. These characteristics are called indicators. Indicators can be considered indicators that characterize a phenomenon in terms of what has happened in it or possible changes. As company's sustainability indicators, it is advisable to use various indicators: profitability, management efficiency; production and human resources potential; business, investment and innovation activity; liquidity and solvency; competitiveness, etc.

In modern conditions, it is relevant to develop a multi-criteria system for assessing the company's sustainability, which contains indicators of all sustainability functional components (financial, resource, organizational, institutional, environmental, information, social status).

In order to manage all the functional components (types) of the company's sustainability, accounting for individual indicators is insufficient. It is necessary to assess the relationships between indicators that characterize individual functional components of sustainability, in order to show their internal subordination and coordination. To do this, we need to structure them in a hierarchical system.

Initially, researchers of the company's sustainability associated it with competitiveness, which, in turn, was associated with product competitiveness. Later, the company's stability was associated with financial stability. Therefore, when developing methods for analyzing the company's sustainability, the approach was as simple as possible, but at the same time quite logical, to divide the threats and risks to the company's sustainability into two categories: financial (related to cash flows) and non-financial. Financial threats and risks included credit risk, liquidity risk, and market risk. An important feature of this approach is that a variety of methods have been developed and applied to assess financial risks, with the help of which risks can be managed. Non-financial risks include: reputational, legal, political, etc. These risks are much more difficult to manage, since it is almost impossible to evaluate them using any methodology.

A major drawback of this approach to assessing the company's sustainability is that it takes into account only threats and risks that hinder the company's sustainability, and does not take into account factors that contribute to improving sustainability, not only at the moment, but also in the future.

Currently, we have developed and used indicators of the company integrated assessment (the market value of the enterprise, the company key performance indicators that make the greatest contribution to the market value growth), in which sustainability is associated with financial stability. It becomes clear to the company's management what needs to be done to improve sustainability, but the assessment itself is no longer made by experts, but by the market.

The problem of assessing the company sustainability is multidimensional, so it requires, in our opinion, a more accurate method of assessing the companies sustainability, which would take into account the company's private potentials: resource and sales, management and marketing, innovation, intellectual and human resources, information, etc.

In our opinion, this goal is largely met by the balanced scorecard (BSC) used in foreign and gradually domestic practice. Its essence is described in detail in the scientific literature and research.

To a certain extent, as a method of assessing the company's sustainability, BSC can be taken as a basis and used as a standard method. This approach will allow us to evaluate the individual companies' sustainability and compare them with each other.

The BSC advantage is that it allows us to perform the company's comprehensive assessment from different sides: financial, relationships with contractors, internal processes occurring in the company, and from the perspective of the company's development opportunities.

The balanced system includes four groups of indicators.

The first group includes traditional financial indicators that primarily interest the company's owner. As a rule, these are indicators of financial return on invested funds.

The second group of indicators characterizes the company's external environment, its relations with contractors. The main indicators are:

- the company's ability to meet the client's needs,
- the company's ability to retain a client,
- the company's ability to acquire a new client,
- client's profitability,
- market size and market share of the company in the target segment.

The third group of indicators describes the internal processes that occur within the company:

- innovation process,
- product development,
- preproduction,
- supply of basic resources,
- products manufacture,
- products sale,
- sales service.

The fourth group of indicators allows us to identify the company's development opportunities:

- personnel characteristics, their abilities, skills and motivation; information systems that allow to deliver critical information
- real-time information;
- organizational procedures that ensure interaction between participants in the process and determine the decision-making system.

The BSC main drawback as a method of assessing the company sustainability is that it provides an assessment of the company's position at a specific time. In the context of global competition, it is necessary to determine not only the company current sustainability, but also its state in the future. This requires a comprehensive analysis of the company's sustainability.

A wide range of methods and indicators can be used to assess sustainability of industrial companies. Each of them has its own advantages and disadvantages, they are different both in the degree of difficulty in mastering them, and in the efficiency level. Their implementation should take into account the scale and features of the company's structure, the industry specifics in which it operates.

Indicators' analysis and classification of an industrial company sustainability allows us to identify the following stability levels: high, medium, low, as well as the economic instability level, crisis and bankruptcy.

The use of various methods allows us to assess the sustainability level, which allows us to make the necessary management decisions at an early stage of the crisis symptoms onset. How can we adapt methods for assessing the companies' sustainability for its real assessment? The answer to this question can find by analyzing the most acute problems that hinder the company's sustainability.

For Kazakhstani companies, the most problematic area of sustainability is financial stability (insolvency). Reducing or eliminating government orders for production, lack of targeted budget funding, and excessive tax burden significantly complicate the solution of the financial stability problem. Solving the problems of the company's financial activities rational organization, improving

the efficiency of managing existing financial resources, and developing an effective credit, investment, accounting, and the company dividend policy puts forward to the fore.

The solution of these problems in industrial companies in the globalization context is closely related to the influence of a number of factors that hinder financial stability: reduced sales, lack of own working capital, violation of contractual obligations by contractors, high competition in the market, the qualified personnel departure, high interest rates on loans, etc.

When analyzing the company economic stability in the financial sector the most important is to analyze changes in indicators such as liquidity and solvency and the coefficients used in this case:

- the total liquidity ratio used for a comprehensive assessment of the company's balance sheet liquidity as a whole;
- the prospective solvency coefficient, which allows us to make a forecast of the company's solvency, i.e. how much the company's production reserves cover long-term liabilities;
- debt ratio showing how much of the company's assets will be needed to cover its long-term liabilities if necessary;
- total solvency ratio, which sets the share of loans and borrowings covered by tangible and intangible assets;
- the liquidity "price" coefficient, which allows us to determine the extent to which all company's external liabilities will be covered as a result of its liquidation and property sale.

An equally problematic area of the company's sustainability is the technical and technological sphere. The technical and technological area analysis of the company's sustainability concerns the equipment state, technology and production organization in the company's production and functional divisions. As indicators to evaluate the status can be the ratio of new and obsolete physically and morally of machinery and equipment, the ratio of new and old technologies in the goods and services production, raw materials availability, components, number of patents, standards and technical conditions in production. The analysis of these indicators allows the company to determine the reserves

for increasing labor productivity, reducing defects in work, reducing production costs, improving product quality, and maintaining the company's competitiveness.

When analyzing the information area of the company's sustainability, the main indicators are:

- measures characteristics to protect the company from industrial espionage by competitors;
- information about potential initiators of industrial espionage and implementation of necessary preventive measures to stop such attempts.

When analyzing the company's sustainability in the environmental sphere the most important is the analysis of changes in such indicators as:

- maximum permissible concentration standards of harmful substances established by national legislation on environmental issues;
- effectiveness of measures to ensure environmental safety of the territory.

The problem of protecting the environmental safety of the territory where the company's production complex is located can only be solved by carefully observing national (international) standards for the minimum permissible content of harmful substances entering the environment, as well as the manufactured products environmental parameters.

The sustainability analysis in the sphere of company's corporate governance provides the state assessment of all management elements in the company. The company economic sustainability in the analysis in the field of corporate governance most important is the analysis of changes of such indicators as:

- the level of the company openness (whether employees of the company's owner whether in the company of CSR norms, whether the reports the employer to the staff on the implementation of the collective agreement),
- the management structure, number of management, an effective management team out of control (number of employees in the administration per head),
- the employee participation level in company management (discussion of company development plans),

- the employees presence in the company who are able to generate new ideas in the production and management areas, the research units presence (including marketing research), etc.

The analysis of these factors allows the company to determine reserves for increasing labor productivity, reducing management costs, improving the teamwork effectiveness, and regulating social and labor relations through social partnership (as the employees participation and their representatives in the company management).

The need to analyze the company's sustainability in the legal sphere is determined by the fact that any company operates within certain legally defined limits. General business rules define national laws, and bylaws interpret laws in practical terms. In addition, companies operate within the framework of administrative regulations on the provision of information and state secrets protection, state standards, and moral restrictions. State supervisory and control bodies, which have been delegated the appropriate powers, issue instructions and orders within their competence.

Company's employees, its partners and contractors may knowingly or unknowingly commit violations of legal norms and rules that cause actual or virtual damage to the company. Therefore, the company's actions that do not comply with laws or regulations and lead to risks should be taken under special control. The company's actions in a wide variety of areas may come under control:

- compliance with national and international laws,
- compliance with the creation rules, licensing and liquidation of companies,
- compliance with all legislation types (civil, administrative, criminal, labor, tax, customs, environmental, copyright and related rights, etc.).

After calculating the impact of sustainability functional components on changes taken together criterion, we analyzed measures to improve the level of industrial companies' sustainability, which is presented in table 4.

Table 4

Measures to improve the company's sustainability

1	Study of the business specifics, the occupied segment in the market, all elements of the company's potential-material, financial, labor, management, and information
2	Analysis of the factors structure (objective and subjective) that negatively affect sustainability
3	Analysis of the factors structure (objective and subjective) that contribute to sustainability
4	Assessment of the measures effectiveness taken to neutralize or minimize factors that negatively affect each component of sustainability
5	Identification of factors that have not been eliminated and are expected to negatively affect sustainability, as well as those that may appear in the future
6	Development of recommendations to eliminate existing negative impacts on sustainability
7	Development of measures to strengthen factors that contribute to sustainability
8	The cost assessment of the proposed measures to eliminate negative impacts on the sustainability level and strengthen the factors that contribute to improving sustainability
9	Identification of those responsible for the implementation of such measures

The economic relations globalization and increased risk factors encourage companies to monitor their activities to ensure economic sustainability in the short and long term. In this regard, there is a need to develop a methodology for a comprehensive assessment of the company's sustainability, which should be a system for measuring, analyzing and interpreting quantitative indicators of various aspects of the company's activities: production, innovation, investment, market, organizational, economic, financial and personnel. Processing and synthesis of those indicators provides an opportunity not only to better understand all aspects of the company's activities, but also to justify decisions aimed at its further development and strengthening sustainability.

The analysis shows that weak companies are more likely to face threats and risks in ensuring sustainability. Highly capitalized and adequately managed industrial companies are, all other things being equal, more resistant to weakening sustainability. A properly functioning supervisory mechanism allows the company to identify threats and risks in advance and take preventive measures.

Model description

In this chapter, we will present the study model using the analysis of information collected from the theoretical base on sustainability and risk management, companies data, and the questionnaire results.

Three major Kazakh oil and gas companies were taken for the study. KazTransOil is the largest oil pipeline company in the Republic of Kazakhstan, providing services for transporting oil to the domestic market and for export. “KazTransOil” JSC is included into the republican section of state register of natural monopolies subjects. The company’s strategic goal is to increase the market value and comply with the state strategic interests in the field of oil transportation via the main oil pipeline. The other two major oil and gas companies Tengizchevroil and PetroKazakhstan are subsidiaries of KazMunayGas and are the second largest in Kazakhstan.

To provide a research model, we conducted a survey among employees of the above-mentioned companies. The results were collected from 10 employees. This questionnaire on sustainable development were published in UNDP website and was made specially for Chinese companies operating abroad. It consists of four main chapters such as Corporate governance, economy, environmental and social. We begin this section with questions related to corporate governance.

Section 1. Corporate Governance

1. Risk management mechanism

(1) What are some of the jobs you’ve done to establish the frame for the risk management system? (You can choose more than one option)

Build up organizational system for risk management	6
Establish standard risk assessment system	6
Establish risk warning system	6
Establish controlling mechanism for emergent risks	6
Cultivate corporate culture of risk management	6
No answer	4

(2) What are the major actions you take for risk precaution in the past three years? (You can choose more than one answers)

Enact relevant articles of incorporation for risk precaution	0
Establish special organization for risk precaution and appoint relative personnel	0

Set up special fund for risk precaution	0
Enact contingency plan and have regular practices	6
Establish risk warning and tracking system	0
Keep regular communications with stakeholders	10
Hire professional third party institutions to evaluate the risks and social impact of projects	6
Others_____	0

(3) What are the risks your company is facing in its operation? (You can choose more than one option)

Main risks the company is facing in its operation <i>(The options have been set into 5 scales with 1 referring to “the risk is very low” and 5 referring to “the risk is very high”)</i>	1	2	3	4	5
Corruption				4	6
Political Situation			10		
Labor Issues		2	6	2	
Community Issues		3	5	2	
Environmental Issues				2	8
Employee Safety					10
Local prices and inflation					10
Diseases			6	2	2
Others					

2. CSR Management system

(1) How do you perceive the relationship between corporate development and social responsibility? (You can choose more than one option)

Corporate development is to pursue the maximum profit and it has little to do with social responsibility	8
For sake of its own development, enterprises can ignore social responsibility when necessary	0
Enterprises must fulfill social responsibility in pursuit of its own development	1
Fulfilling social responsibility can enhance the company’s development and competitiveness	1

(2) Have you built CSR management mechanism specifically for local businesses?

Yes and it works well.	5
Yes but it doesn’t work very well and needs improvement.	5
No but we plan to build one.	0
No and we don’t have any plan about that.	0

3. Stakeholder`s engagement

(1) How do you evaluate the importance of stakeholders in the KZ?

Importance of stakeholders in your opinion <i>(The options have been set into 5 scales with 1 referring to “the least important” and 5 referring to “the most important”)</i>	1	2	3	4	5
Shareholders(Investors)					10
Clients					10
Suppliers			2	5	3
Government					10
Employees			3	6	1
Local communities		1	5	2	2
Media			1	6	3
International organizations		1	4	3	2
NGOs		2	5	2	1
Competitors		3	5	2	
Financial institutions			1	5	4

(2) Do you have the stakeholder involvement mechanism that is built to ensure stakeholders' right to know, supervise and participate?

Yes and it works well. We keep regular communication with stakeholders for at least once or twice a year	7
Yes but it doesn't work very well. We only contact local stakeholders when a problem occurs.	3
No but we plan to build one.	0
No and we don't have any plan about that.	0

4. Internationalized Management

(1) What is your knowledge on concepts relating to sustainable development?

Your knowledge on concepts relating to sustainable development <i>(The options have been set into 3 scales with 1 referring to “very familiar”, 2 referring to “basically familiar” and 3 referring to “not familiar”)</i>	1	2	3
Corporate Citizenship	4	2	4
Stakeholder Theory	1	5	4
Triple Bottom Line (Economic, Environmental and Social)	1	5	4
UN Millennium Development Goals and Global Sustainable Development Goals			10
The United Nations Global Compact			10
International Labor Conventions			10
SA8000	3		7
ISO26000	3		7

OECD Principles of Corporate Governance Structure		3	7
Codes of Conduct of Multinational Companies			10
Global Report Initiative (GRI)		3	7
The United Nations Convention on Biological Diversity			10
Sustainable Development Framework of International Council on Mining and Metals (ICMM)			10
Environment, Health and Safety (EHS) Guidelines of World Bank Group			10
OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (2 nd edition)			10

Section 2. Economy

1. Compliance

(1) Have your overseas branches established system in the following aspects?

Honest operation	
Anti-corruption	10
Anti-commercial bribery	10
Anti-unfair competition	0
Others: _____	0

(2) Has your company been investigated for breach of local laws and regulations on investment, taxation, employment, environmental protection or intellectual property?

No	5
Yes it happened once	3
Yes it happened more than once	2

(3) Has your company been investigated due to commercial bribery or other corruption?

No	10
Yes it happened once	0
Yes it happened more than once	0

2. Fair Competition

(1) In the past three years, how many time has your company been questioned by the government, media or NGOs for having market or price advantages?

Zero	10
Once	0
More than once	0

(2) In the past three years, who are your company's primary competitors in operation?

Local companies	4
-----------------	---

3. Income from operations

(1) How profitable are your investment cooperation projects?

Very profitable	6
Profitable	3
Even	1
Temporarily in loss	0

To sum up results of questionnaire for the section “Risk management” need to mention several findings/

- Nearly more than half of questioned employees have awareness about risk management system in their companies

Section 3. Environmental

1. Compliance

(1) What is your knowledge about the environmental laws and regulations in relation to your own industry?

Very familiar	4
Familiar	6
Less familiar	0
Not familiar	0

(2) What is your knowledge about the environmental laws, regulations and guidance in relation to the investments and cooperation which are enacted by the government?

Very familiar	4
Familiar	5
Less familiar	1
Not familiar	0

2. Energy Consumption

(1) Have your company enact and implement relevant measures of energy efficiency management and energy conservation for the operation?

Yes, the production cost has been saved	5
Yes, but temporarily haven't seen the effect of cost-efficiency	0
No	5

3. Exhaust, sewage dispose and waste management

(1) Has your company enacted and implemented any relevant measures of waste and poisoned waste disposal in the operation?

Yes, no relevant environmental accidents happened in the past three years	4
Yes, but relevant environmental accidents happened in the past three years	6
No	0

4. Biodiversity

(1) To what extent that the local biodiversity protection has been affected by your company's operation?

Serious	4
A little	5
None	1

(2) The implemented measures of biodiversity protection in the company's overseas operation:

participate in the local environmental ecological system	3
support the species' ex situ conservation	0
assist to build biological gene pool	0
promote to construct the legal system for biodiversity	0
others	7

Section 4. Social

1. Compliance

(1) Has your company invited the third party to implement the social influence assessment before launching the project?

Yes, no suggestion for improvement have been provided	3
Yes, suggestions provided and are being progressively implemented	2
Yes, suggestions have been provided and implemented thoroughly	5
No	0

(2) In past three years, how many times does your company have disputes caused by the social problems?

None	5
Once	2

More than twice	3
-----------------	---

(3) In past three years, how many times has your company been investigated or reported on social problems by local NGOs or media?

None	7
Once	2
More than twice	1

2. Industrial relations

(1) The major labor problems that your company has encountered:

The major labor problems that your company has encountered overseas	Evident	Average	Less Evident
Disputes on labor relations contract	3	5	2
Guarantee on Labor rights problem	3	5	2
Lack of experience on working with Labor Union		2	8
Occupational health and safety	1	5	4
Training and education	3	5	2
Disagreement on payment and welfare	4	3	3
Disputes on work injury compensation	4	3	3
Strikes	3	5	2

(2) In terms of the harmonious labor relations, the company's opinion:

Opinions on building the harmonious labor relation <i>(The options have been set into 5 scales with 1 referring to "the least important" and 5 referring to "the most important")</i>	1	2	3	4	5
Obey local laws and regulations on labor employment			1	2	7
Enhance the integration of foreign and local employees				1	9
Increase the portion of local employees in the management team			1	2	7
Get familiar with the function of local labor organizations and build well-functioned communication mechanism		2	3	2	3
Provide more promotion opportunities for local employees		2	3	2	3
Learn from the management experience of other multinational corporations				3	7
Provide more training for local employees			2	2	6

(3) Have your company established management system for employees' occupational health and safety?

Have established extremely sound management system for occupational health and put an end to occupational disease	0
Have established basically sound management system for occupational health and could control occupational diseases	10
Is establishing the management system for occupation health	0
Haven't established the management system for occupational health	0

(4) What kinds of measures have been taken by your company to guarantee employees' salary and welfare? (You can choose more than one option)

complete management system for remuneration	10
sound incentive system	0
never delay the wage payment	10
pay overtime according to law	10
offer paid leave	0
Others, please specify:	0

3. Social contributions

(1) In what forms has your company contributed to the development of local society? (Please choose three most relevant options)

Help to build hospitals, schools and government buildings	0
Participate in local infrastructure construction	8
Launch philanthropic projects especially for local vulnerable groups	0
Sponsor local students to study	6
Support local government officials to learn on development experience	2
Develop occupational skills trainings specific to local residents	7
Launch community anti-poverty projects together with local NGOs or UN institutions	0
Post-disaster emergent rescue	0
Launch ecology and environment protection projects in local area	6
Others	

(2) The company participate in the donation projects:

Only financial donation to the local communities, but not responsible for the donation effect	5
The company is responsible for organizing and donating, and keep an eye on the donation effect	5
Financial donating to international organizations or local NGOs, but not responsible for the donation effect	5

Cooperate with international organizations or local NGOs to establish the donation project, and keep an eye on the donation effect	5
Other	0

Presentation of the main results and tests

Managing the company's sustainability based on risk management

In the previous chapters, we collected information and research data on the sustainability of three Kazakh oil and gas companies. In this chapter, we will present the results of the research, propose a scheme for companies' sustainability and risk management. The scheme we developed takes into account all the nuances that we received during data collection.

Strategic analysis tools can be used to assess discrepancies between the company's adopted strategy and the actual market situation. These tools work well in stable, established conditions and can be used to diagnose the company sustainability.

However, in crisis or stagnation times, when the industrial company's activity is accompanied by increased instability and risks, more mobile methods and tools are needed to diagnose sustainability. Such methods and tools can be: benchmarking, as a method of comparing a company with practically successful competitors, expert evaluation and the company's value analysis. In our opinion, risk management can be the most effective method not only for analyzing and evaluating the company's condition, but also for its operational impact on improving the company's sustainability.

The risk management value increases as the company develops, reaches a certain level of business maturity, and accumulates values that may be lost due to adverse risk situations. However, the company's management sets specific tasks in the field of risk management depending on the specific targets adopted, the company's attitude to risk and the resources available to it.

The economic aspects of risk management in a business are primarily aimed at maintaining sustainability. Their main task is the company's desire to adapt to unstable periods in the economy development, to find such methods, forms and tools of decision-making that would maximize the company's focus on survival in an unstable environment, maintaining sustainability and improving it.

Any company strives not so much to maintain the balance achieved, but to develop stabilizing measures designed for the future. The main thing, in our opinion, is that companies in market conditions can implement these measures on their own with some support from outside.

For successful risk management implementation, the company must have an internal and external infrastructure, which includes: installation and organizational and administrative documents, a database and system for processing knowledge and data, personnel training and training, technical base, research and development.

Initially, we analyze the characteristics of the external environment in which the company operates, as well as identify “bottlenecks” in the company’s activities. The need for these measures is related to the fact that the company must determine its attitude to possible risks and develop guidelines and goals for further actions that the company can allow in risk management. It is obvious that the attitude to risks will be formed depending on the company’s limitations and resources: material, financial, organizational, informational, and human resources.

Then the tasks are set for risk management in the field of managing risks that have not yet been implemented and risks that have already been manifested in the company’s activities.

After setting the task, information about possible risks and their impact on the company begins to be collected. This complex process requires professional knowledge from risk managers, since the risks themselves are diverse in nature and in the nature of their impact. The result of this work should be the identification of risks and their list. Risk identification allows companies to identify those of the risk events that pose a threat to the company, and events that give the company a chance to win.

The identified risk events must be quantified in order to compare them and assess the danger or acceptability for the company, as well as the magnitude of the different risk options consequences. The assessment complexity is that it must be made for events that have not yet occurred. However, it is possible to assess the risk level by comparing the expected profit and expected loss when comparing two or more variants of economic behavior using the formula:

$$C = \frac{P}{L} \quad (1),$$

where C – risk coefficient; P – expected profit; L – expected loss.

Risks identification and assessment, as well as possible losses assessment associated with them, carried out by risk management, allow us to conduct risk analysis and obtain information necessary for the development of specific risk management solutions.

In our opinion, the most rational approach to substantiating the company's response to risk is as follows:

- completely avoid risk;
- change the risk to an acceptable level (minimize the risk, reduce the possible losses size);
- transfer the risk to someone else;
- take the risk.

The company's choice of a particular risk response is related to the resources availability, the possible costs comparison, and hypothetical or real benefits. Approaches can be applied separately or combined. The implementation of these approaches should be reflected in the risk management plan and resources provided for its implementation. The risk management action plan should contain an assessment of the risk specifics that has occurred, a plan for employee behavior in a crisis, and coordination of employee actions (behavior scenarios) in a crisis.

The simplest and most radical way to respond to risk is to avoid risk (risk rejection). In accordance with GOST R 51897-2004 in force in Kazakhstan since 2005, risk prevention (risk rejection, risk avoidance) means a decision not to be involved in a risky situation or an action that prevents involvement in it. The wording in the guest is ambiguous, so we will use the term "risk aversion"⁶¹. Risk aversion allows the company to completely avoid possible losses, although it does not allow the company to fully receive the expected profit associated with risky activities.

Of course, the company should take into account that the refusal of a risky operation can lead to various consequences, often undesirable:

⁶¹ СТ РК ГОСТ Р 51897-2004 «Управление риском. Термины и определения», https://online.zakon.kz/Document/?doc_id=30373987

- the decision to waive the risk may result in the inability to fulfill contractual obligations;
- taking a risky decision can bring a profit significantly exceeding the possible losses when a risky event occurs;
- avoiding one type of risk may lead to other types of risk. For example, avoiding the risk associated with air transport of semi-finished products or components poses the problem of accepting the risk associated with road or rail transport. In such a situation, it is necessary either to review the operation goals, or to change the attitude to risk.

Risk rejection is associated with the positive expectations rejection, so its application is appropriate only in the event of the most serious and major risks, for example, at the risk level of the company bankruptcy or property complete loss. The use of less risky actions of the company is a pattern in the company activities that seeks to obtain high, although risky, results.

The most significant advance in making a successful risk management system is to make a RM service with a broad arrangement of divisions. All the risk management executives' administration divisions should work dependent on a typical program of risk management. The formation of a normal risk management the executive's administration obliges the board to coordinate such a help into the organization authoritative structure, with the goal that it fits consistently into the arrangement of customarily autonomous utilitarian subsystems of the organization.

At the initial stages of creating the risk management service, it was possible to restrict the authorized appointment or working groups on risk management to the company's line and functional divisions, assigning them the responsibility for identifying threats and risks and their diagnostics in various areas of the company's activities. In this case, authorized or working groups on risk management have to perform a very large amount of work. To do this, they must be able to detect signs of risk events actual occurrence, as well as determine what the observed risks are, whether they will become a risk-hazard or risk-chance for the company. They should be familiar with methods of risk assessment from the point of determining the risks occurrence consequences size. Risk managers should

identify risks and provide recommendations to the company's division managers on how to respond to risks: risk avoidance, reduction, distribution, or acceptance.

As you can see, the work volume in a large company is too large to assign it to individual risk management specialists or work groups. In addition, all their activities must be combined and coordinated by someone in a centralized manner at the company level. This need is because the recommendations of risk managers working in different departments, their response to risk may differ sharply or contradict each other. In addition, they cannot have information about the external causes of risks arising in the company. Thus, the need for risk management objectively rises to the company management strategic level, especially at the decision-making stage.

The risk management service thus becomes a logical addition to the company's traditionally independent functional subsystems and should be located at the same management level with them. In these circumstances, the risk management service formation should also be formed at the highest level of the company's management – the board of directors or the company's management board.

The success of risk management in the company depends on the tools available to risk management in developing responses to risks in a specific economic, legal and organizational environment. Risk response tools can be divided into three classes: (a) impact on the risk source, (b) impact on the organization's external environment (environmental measures), and (c) impact on the company itself (object, subject). The most effective responses to risks consist of combined and coordinated impacts in three areas: on the source, the environment, and the company.

The arsenal of forms, methods and tools used by risk management can be very diverse. In order to successfully combine these methods of manipulating the company's risk position, it requires the use of various techniques used by risk managers. Among them:

- using the risk manager experience;
- monitoring the work of the company's employees (timing, interviewing, etc.);
- remote supervision;
- SWOT analysis;

- PEST analysis;
- benchmarking (using analogs and samples of the company);
- assessment and analysis of the company’s value dynamics based on the postulate that the main goal of risk management is to protect the company’s market value for the long term;
- expert assessments of specialists;
- BCG matrices;
- financial market assessment methods;
- rating of various rating agencies;
- stress testing-modeling of organizations risk behavior; and others.

For successful risk management, the company must have the necessary internal and external infrastructure in place. The infrastructure should include the following components:

- a set of installation and organizational and administrative documents (orders and instructions, the composition of the situation management groups in the critical situations event, work schedules, etc.);
- a computer database that allows authorized persons to obtain information necessary for risk management in the company;
- employee training system and training (availability of training programs and training scenarios aimed at preparing employees to act in risky situations);
- technical base (the detection and treatment of the risk situation development symptoms);
- external virtual infrastructure of professional support (communication with external specialists: lawyers, local administration officials, public organizations, etc.).

Technologically, risk management can be implemented in several stages, table 7.

Table 7

Stages of implementation of technological risk management

Stages	Stage name	Content of the activity at the stage
1	Problem statement.	Forecasting possible risks Justification of the need to solve the problem

		Restrictions on actions to achieve goals
2	Risk identification.	Identifying and describing risks
3	Risk measurement.	The measurement or quantification of risk Comparing risks with each other Assessment of the risk hazard and its acceptability for the company
4	Impact analysis.	Possible consequences analysis when a risk occurs Selection of analysis methods: statistical, analytical and expert assessments
5	Risk ranking	Ranking the risks according to the degree of appropriateness or danger
6	Choosing a risk management method	Comparing the actual cost of risk management Determining the size of the consequences of risk occurrence
7	The action plan for the risk management	Preparation of a risk management action plan Allocation of appropriate resources
8	Implementation of the risk management plan	Implementation of planned activities Checking the results obtained Determining the risk management effectiveness Adjusting the risk management procedure

Based on the generalization of risk management practice in KazTransOil, three main methods of possible consequences analysis when risks occur can be proposed and tested: statistical, expert assessments and analytical. The statistical method is based on the statistical series analysis for the largest possible period in order to compare the frequency of the company actual losses with the expected probability of their occurrence. The method can be used to assess various risks. The analysis revealed the points of critical and unacceptable risk for the company and the zone that does not represent the risks manifestation.

The expert evaluation method involves the collection and processing of expert opinions, preparation of the ratings and correlation synthesis with them of certain risk areas. The use of this method made it possible to conduct a rating assessment of the company's activities riskiness, determine the possible risk zones size, determine the amount of necessary reserves to cover losses from exposure to risks and develop measures to prevent them.

Risk ranking allowed us to determine how the company's management will treat risks: to avoid them, minimize risks, transfer risks to other entities, or accept risks. The attitude to risks allowed us to

choose ways to handle risks, and after evaluating the advantages and disadvantages of these methods, choose an acceptable option.

Since resources in each company are limited, their number becomes a criterion for choosing ways to manage risks. At this stage, the company has to compare the actual risk management costs and the possible risk occurrence consequences. To do this, a risk management action plan is drawn up and appropriate resources are allocated for its implementation. The action plan becomes the main document that defines the participation of a specific employee in the company's risk management, identifies managers and specific performers of the tasks set for risk management.

The action plan includes:

- financing of measures aimed at eliminating the consequences of the risks occurrence;
- creation of reserves to eliminate the risks consequences;
- distribution of responsibility for the risks occurrence and measures to prevent them between managers and performers;
- description of risk management procedures and mechanisms.

If the company decides to prevent the risks occurrence or minimize them, it should:

- obtain guarantees and sureties from partners or servicing banks;
- create various types of reserves – stocks – financial, material;
- insure risks in insurance companies;
- use measures of employees state protection of the company;
- diversify risks.

If the company's risks were not prevented in full or in part, then there is a way to resolve the risks, such as their compensation. In this case, the company will be forced to:

- use previously created special reserve and insurance funds for this purpose;
- obtain from insurance companies insurance compensation;
- receive compensation and subsidies from government agencies and foundations to support entrepreneurship;

- apply to the judicial authorities with relevant claims;
- write-off of losses, etc.

The next stage is actually the implementation of the planned activities, verification of the results obtained (monitoring) and the effectiveness of risk management procedures determination. If necessary, risk managers can adjust the risk management procedure at separate stages. Coordinated risk control is performed across all divisions and the company services.

In the companies such as KazTransOil JSC, the risk management service was created at the head of the risk management committee of the company's board of directors, which includes key managers and the company specialists, as well as representatives of shareholders⁶². The committee main goal is to conduct the necessary and sufficient risk management, which will be able to implement the company's strategy to ensure long-term sustainability at an acceptable level.

Employees perform technical functions or employees groups included in the staff structure of the company major functional services, who will specifically monitor risk situations in the services and provide information in a generalized form to the members of the risk management committee of the company's board of directors.

Risk management in PetroKazakhstan is currently carried out only in the financial and the company economic activities. This activity is carried out by the financial departments of the company each division (enterprise) under the general direction of the company's financial service. Financial departments of the company's divisions identify, evaluate and take measures to minimize financial risks.

The risk management implementation elements analysis in Tengizchevroil shows that the company, in order to ensure sustainability, mainly monitors only financial risks: liquidity and insolvency, non-performance of business contracts, price risks, currency risks. The company's focus only on the organization of financial stability planning and financial risks is understandable. The company primarily seeks to link the sources of financial resources and the direction of using its own

⁶² АО «КазТрансОйл», 2017, с. 8.

funds. Until recently, the company's methods of minimizing risks were limited to selecting more profitable suppliers and buyers, diversifying the company's activities, as well as property insurance⁶³.

As for risks in the company's activities other areas: technical and technological, human resources, information, corporate governance, legal, environmental safety, and others, the company's line and functional managers identify, evaluate and take measures to minimize them.

The lack of trained and specially appointed employees who would perform the function of risk control in the listed areas of the company's activities indicates that the company's risk management is implemented in fragments and does not affect the most important areas of the company's activities that are subject to threats and risks. The company does not have a comprehensive risk management system that would affect all aspects of the company's activities.

In our opinion, this is not enough at all. It is necessary to constantly monitor the entire socio-economic, regulatory, technical and technological, information and management company's environment. This is possible when creating a full-scale independent risk management service in the company. Its creation will allow not only to identify possible threats and risks, timely notice signs of their actual occurrence, but also to determine what the observed risks are, whether they will become a risk-hazard or a risk-chance.

Considering the development strategy of PetroKazakhstan, Tengizchevroil and KazTransOil for 2018-2020, the company's board of directors instructed the company's CEO to assess risks during this period and develop a risk management program. However, the decision of the company's board of directors does not provide for the creation of a special service or even a division in the management bodies structure that would deal with these problems. The maximum that was proposed was to create a risk manager position in the company, whose duties would include solving such issues as:

1. development of a corporate standard for an integrated risk management system;
2. development and implementation of a system for motivating managers for risk management, development of KPIs for risk management;

⁶³ Tengizchevroil JSC, 2017, <http://www.tengizchevroil.com/en/hes>

3. development and implementation of the actions budgeting system for decrease in risks;
4. development and implementation of a mechanism for accounting for the impact of risks on budget indicators (formation of the company's budget taking into account risks);
5. development of technical specifications for updating the risk information system;
6. identifying risks, creating the company's risk map, conducting interviews with the company's senior management on risk management issues;
7. preparing risk management reports for the company's top management;
8. developing and documenting risk assessment methodologies;
9. risk assessment (currency, price, credit, etc.);
10. KRI development and monitoring;
11. organization of market risks hedging with production financial instruments;
12. participation in working groups on integration implementation and investment projects.

It is obvious that a single specialist, even of the highest qualification, cannot perform such a volume of work. It is necessary to create specialized divisions within the company's management bodies. In our opinion, along with the traditional committees in the company's board of directors, it is necessary to create a risk management committee.

The activities of the company's risk management service should be linked to the activities of the company's main production and functional services: accounting, finance, marketing, production, engineering, infrastructure and human resources services. To meet this condition, the risk management service must be integrated into the company's multi-level management, technological, and spatial structure.

Thus, the problem solution of ensuring the sustainability of Kazakhstani companies can be effectively implemented based on the use of risk management technologies.

Concluding remarks

In accordance with the dissertation research purpose, the theoretical and practical aspects of ensuring the industrial companies sustainability are studied and a methodological approach to its

complex multi-criteria assessment for making effective preventive decisions is developed. The importance of this approach is determined by the fact that it is necessary to search for optimal models and technologies for managing companies sustainability operating under conditions of uncertainty and risks.

The set of risks that accompany the industrial companies' activities shows the urgent need to identify, rank and evaluate all risks when building a company's development strategy.

Analysis of the risk map used by the company shows that, in order to ensure sustainability, only operational, financial, commercial and legal risks are tracked. The greatest attention is paid to financial risks: liquidity and insolvency, non-performance of business contracts, price and currency fluctuations. The companies pay little attention to the risks that arise in the socio-economic and managerial areas, especially in the development strategy area. These are the areas where the company has the greatest failures. According to the risk map, only two types of risks are identified in the company, which are strategic: "absence or insufficiently developed company development strategy" (risk level is equal to 1) and "architectural and construction risk" (risk level is equal to 1).

Risk management in industrial companies is currently focused on the company's financial and economic activities. This activity is carried out by the financial departments of each division of the company under the overall direction of the company's financial service. Financial departments of the company's divisions identify, evaluate and take measures to minimize financial risks.

Risks in other areas of the company's activities: technical and technological, human resources, information, corporate governance, legal, environmental safety and others are identified, evaluated and taken measures to minimize them by line and functional managers of the company's divisions. The lack of trained and specially appointed employees who would perform the risk control function in the listed areas of the company's activities indicates that the company's risk management is implemented in fragments, partially, in the form of separate elements and does not affect the most important areas of the company's activities. The companies do not have a comprehensive risk management system that would affect all aspects of the company's activities. This does not allow full monitoring of the entire socio-

economic, regulatory, technical, technological, information and management the company's environment.

The necessity and possibility of risk management based on the use of risk management technologies are proved. This requires the creation of an independent risk management service in the company. The activities of such a service should be linked to the activities of the main production and functional services of the company: accounting, finance, marketing, production, engineering, infrastructure and human resources services. This condition can be met if the risk management service is integrated into the multi-level management, technological and company's spatial structure. The risk management system will not only identify possible threats and risks, timely notice signs of their actual occurrence, but also determine what the observed risks are, whether they will become a risk-hazard or a risk-chance.

Given the increased role of and attention to sustainability in the modern company management, the necessity of economic sustainability assessment in the framework of the increasing the company sustainability strategy. The solution to this problem is possible by developing and implementing a methodology for assessing the company sustainability, which should allow us to constantly monitor the level and dynamics of sustainability indicators, analyze them, make a comparative assessment of the company's activities and contribute to the formulation of recommendations for making effective management decisions.

The necessary requirements are justified and a methodological approach to assessing company's sustainability is developed with the construction of an appropriate model based on the use of a multi-criteria assessment of its sustainability. The features of the proposed model for assessing sustainability are due to the fact that it allows such an assessment to be carried out in a multidimensional manner, taking into account the most important areas of the company's activity: production, innovation and investment, market, organizational and economic, financial and personnel, etc.

The main advantages of the developed model are:

- the developed and proposed model is characterized by a broad coverage of key performance indicators, simplicity and clarity of assessing the company sustainability, and the validity of their choice. The model omits excessive indicators, and at the same time includes factors that have a dominant influence on the company's sustainability;
- multi-criteria assessment of the company's sustainability helps to make better informed decisions in the processing the data of possible borrowers in order to determine the insolvency risk (based on sustainability, level of creditworthiness, etc.), to better determine the lending terms, the company sale or purchase.

The result of the study is of practical interest to experts and specialists of industrial companies in terms of maintaining sustainability in the process of achieving goals by timely identifying “problematic” aspects of the company's activities and implementing proactive measures to prevent its bankruptcy.

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