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THE USE OF DIGITAL TECHNOLOGIES IN RISK MANAGEMENT IN THE COMPANIES OF THE REPUBLIC OF KAZAKHSTAN

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Abstract: *The purpose of the study is to develop and explain more deeply types of the methods of digital and information technologies in Risk Management in Kazakh organizations with help of international experience. The article presents analysis of risk management methods in innovative and international companies and will clarified the concept of risk-management system as a set of elements designed to identify, analyse and assess risks. Methods and types of problem solving associated with risks are universal for any business and organization that are conducted in the Republic of Kazakhstan. As a result, foreign experience of using digital technologies can improve the efficiency and quality of risk management solutions in any Kazakh organizations.*

Keywords: *risk management, digital technologies, risk assessment, risk analysis, digitalization, innovative methods, information technologies*

ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ КОМПАНИЯЛАРЫНДА ЦИФРЛЫҚ ТЕХНОЛОГИЯНЫ ТӘУЕКЕЛДЕРДІ БАСҚАРУДА ПАЙДАЛАНУ

Аңдатпа: *Зерттеудің мақсаты халықаралық тәжірибе көмегімен қазақстандық ұйымдардағы тәуекелдерді басқарудағы цифрлық және ақпараттық технологиялардың әдістерінің неғұрлым терең түрлерін әзірлеу және түсіндіру болып табылады. Мақалада инновациялық және халықаралық компанияларда тәуекелдерді басқару әдістерінің талдауы келтірілген және қауіп-қатерлерді басқару жүйесінің тұжырымдамасы тәуекелдерді анықтауға, талдауға және бағалауға арналған элементтер жиынтығы ретінде түсіндіріледі. Тәуекелдермен байланысты проблемаларды шешудің әдістері мен түрлері Қазақстан Республикасында жүргізілетін кез келген бизнес және ұйым үшін әмбебап. Нәтижесінде цифрлы технологияларды пайдаланудың шетелдік тәжірибесі кез келген қазақстандық ұйымдарда тәуекелдерді басқару шешімдерінің тиімділігі мен сапасын арттыруға мүмкіндік береді.*

Түйінді сөздер: *тәуекелдерді басқару, цифрлық технологиялар, тәуекелдерді бағалау, тәуекелдерді талдау, цифрлау, инновациялық әдістер, ақпараттық технологиялар*

ИСПОЛЬЗОВАНИЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ В УПРАВЛЕНИИ РИСКАМИ В КОМПАНИЯХ РЕСПУБЛИКИ КАЗАХСТАН

Аннотация: *Целью исследования является разработка и более глубокое объяснение типов методов цифровых и информационных технологий в управлении рисками в казахстанских организациях с использованием международного опыта. В статье представлен анализ методов управления рисками в инновационных и международных компаниях, а также разъяснено понятие системы управления рисками как совокупности элементов, предназначенных для выявления, анализа и оценки рисков. Методы и виды решения проблем, связанных с рисками, являются универсальными для любого бизнеса и организации, которые ведутся в Республике Казахстан. В результате зарубежный опыт использования цифровых технологий позволяет повысить эффективность и качество решений по управлению рисками в любых казахстанских организациях.*

Ключевые слова: *управление рисками, цифровые технологии, оценка рисков, анализ рисков, цифровизация, инновационные методы, информационные технологии*

INTRODUCTION

The main goal of the research is to analyze an experience of foreign companies and develop risk management tools and digital technologies in the Kazakh organizations. Risk assessment is an important research theme because the risks were always present in the any activity of business. Risk management occupies central position in any business regardless of size, activity or sector. Furthermore, in addition to an analysis of profitability, the manager should also focus his attention on potential risk factors of the investment.

This research is relevant because risk management issues very important in our country. First, the growing influence of risks on the economic activity of production and business structures. Secondly, the increase in the level of competition among companies. Thirdly, the complication and interrelation of risks of the most diverse aspects of the activities of production and business structures. In Kazakh companies it is very important to process and analyze risks at all levels because organizations get into losses when they fail to identify and evaluate risk on time. [1]

Since in almost any Kazakh enterprise employees perform to use various actions with monetary funds, it is necessary to pay attention to working with risks. The most important risks affecting the operation of the enterprise are the risk of losing all the income of the organization and the risk of absolute non-receipt of income. [2]

Thus, in Kazakh organizations have lack of risk management models, thereby organizations need to improve these tools. Risk management is about looking ahead to identify further opportunities for avoiding losses. The aim of the research is to perform a review of recent advances made in the risk field, having a special focus on the fundamental ideas and thinking, including information and digital technologies that form the generic risk research.

Risk management in Kazakh organizations

In Kazakh companies there are two main risks that can be occur during the company's life cycle: the risk of loss of all incomes and the risk of absolute non-receipt of income. With the onset of even one of the risks, there is a great possibility that the company will become bankrupt.[3]

Risk is often described by an event, a change in circumstances or a consequence. A common definition of risk suggests that risk is the effect of uncertainty on achieving or surpassing business objectives. This effect may be positive, negative or a deviation from the expected, for example in forecasts and projections. [5]

In addition, there are several types of risk that can influence on the organization (Table 1)

Table 1 – types of the risk in Kazakh companies

By the company's industries	• Financial risks • Commercial risks • Production risks • Ecological risks • Security risks • Social risks • Political risks
By characteristics of Management	• Strategical risks • Tactical risks • Operational risks
By level of risk	• Critical risks • Significant risks • Moderate risks • Low risks
By duration	• Long-term risks • Short-term risks
By diversification opportunitiess	• Systematic risks • Specific risks
By area of origin	• External risks • Internal risks

In order to prevent the detrimental effect of risks on the operation of the enterprise as a whole, it is necessary to find the necessary information about possible risks. If organization develops a program to prevent the occurrence of risks and use high-quality digital and information technologies, it is possible to reduce occurrence of risks in this enterprise. [6]

Information and digital technologies that can used in the Kazakh enterprises: foreign experience

In foreign companies, there are many various of methods and types of risk management, but first during the research it was highlighted the

company EY (Ernst & Young (doing business as EY) is a multinational professional services firm headquartered in London, England, United Kingdom) on the successful experience of the company.

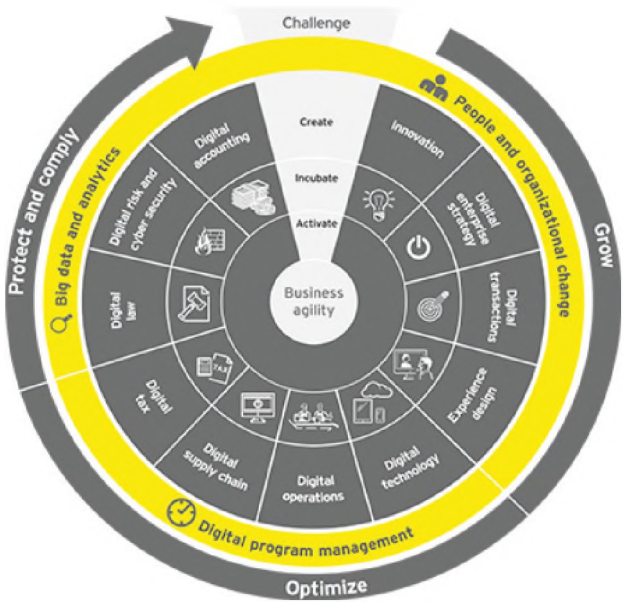
EY is one of the largest professional services firms in the world. EY has a specialized «EY Digital division», whose mission is to assist customers in developing a Digital Transformation strategy and its implementation. It is important to note that digital transformation is a complex project. To minimize risks in a company, EY Company identifies five key areas of transformation, and in each of them, together with the client, the company solves the company's problems using certain digital and IT solutions. Thereby, EY company helps other companies (clients) to cope with risks within the organization, developing all the scenarios of the project. [12]

First, the company's strategy - the company helps the client to revise the business strategy and operating model in accordance with the requirements of the time. Secondly, incubation and innovation - the company is helping to create the platforms and conditions necessary for testing new ideas and business models. Third, the introduction of a "new" experience — the company analyzes the consumers of the products and services of their customers — their world, needs, expectations, and consumer patterns — then incorporates the necessary and relevant nuances into the "new" consumer experience. Fourthly, operating activities - together with the client, the company builds, simplifies and automates business processes and links in the value chain in order to achieve the goals set with regard to digital goals. Fifth, protection and trust - the company identifies all sorts of digital customer risks and helps build a system of readiness to respond to them. [12]

In each of the five transformation components identified, a variety of digital technologies is applicable. For example, in the "Operational activities" direction, so-called robotic process automation (RPA) is being actively implemented in the CIS and Kazakhstan today. This software performs human actions according to a given algorithm and frees employees from routine operations in the office. RPA successfully used in accounting, financial, operating units and HR. «Robotization» allows to achieve a significant reduction in labor costs: robots perform employee actions around the clock high-speed, error-free. In addition, the introduction of RPA requires no intervention into the existing IT-architecture companies. Unlike the implementation of complex IT-systems robotics does not require substantial investment and time for projects is measured in weeks.

In the category of "Protection and Trust", the most relevant solutions for cybersecurity organization (Cybersecurity) are data protection and confidentiality technologies (including improved data classification, implementation of data leakage protection systems), cybersecurity threat management (comprehensive security testing, building and improving security operations center) and other solutions. [12]

As for the sectors of the economy in which digital solutions are applicable, there are practically no restrictions. Digital solutions are so good that they are flexible and adaptive. (Scheme 1) Thus, a company that has traditionally been considered conservative may also be subject to transformation. For example, in the field of housing and utilities or electricity. [12]



Scheme 1 - EY's digital solution

EY Company shares useful digital information with existing and potential customers, as well as business partners and the public sector. The company organized a series of business meetings and specialized seminars at the EY site in different cities of Kazakhstan, and regularly participates in leading forums, for example, the K17: Kazakhstan Growth Forum and the Cashless Kazakhstan Summit. In addition, the company participated in the republican meeting on digitalization, organized by the Ministry of Information and Communications of the Republic of Kazakhstan, the national information and communication holding «Zerde» and the corporate Fund for the Development of Information and Communication Technologies. In addition, the company recently conducted an international information security survey in Kazakhstan (EY Global Information Security Survey 2017). [12]

Moreover, besides the services offered by EY company, the program Enterprise risk management (ERM) is also becoming popular in international companies. ERM (Enterprise Risk Management) is a concept that describes the methodologies and processes that organizations use to manage risks and opportunities related to achieving their goals. ERM allows you to lay the foundation of risk management, including identifying specific events or circumstances that can affect the achievement of company goals (threats and opportunities), evaluate them in terms of the likelihood and magnitude of consequences, develop a response strategy and track performance. Such work allows you to protect and create value for stakeholders, including owners, employees, customers, regulators, and society as a whole. The ERM concept can also be characterized as a risk-based approach to enterprise management, integrating strategic planning, operations management and internal control. [7]

Another important characteristic of an effective ERM program is the program's ability to integrate the organization's people in a more operationally aligned manner by formally establishing and explicitly defining risk-taking authorities, risk tolerances (that is, across key, organizationally important functions and processes) and setting risk tolerance "levels" within the context of an organization's strategic, operational, and financial objectives. [8] There is no experience of using this platform; however, the introduction of this software in the future will contribute to more thorough and competent risk management. (Figure 1 – ERM software).

In international companies is also have program Kondor+. This software is a solution for managing risks and positions for the front and middle office. [9]

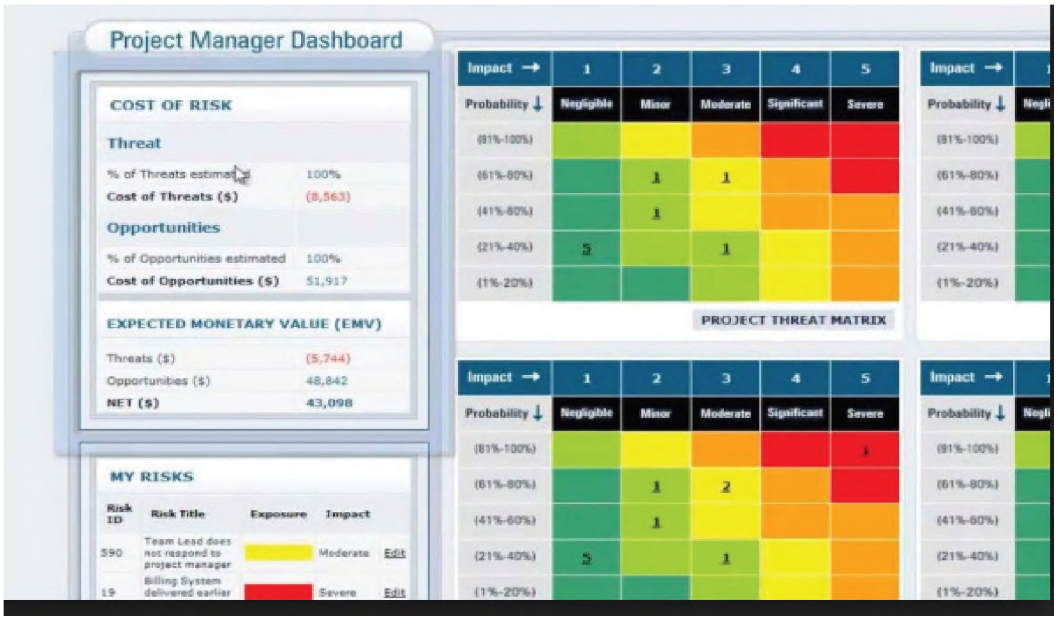


Figure 1 - ERM software

The product offers powerful, flexible tools for working with transactions, positions, limits and risks across the entire spectrum of financial instruments in real time. Supported markets and financial tools.[10]

Foreign exchange market (Forex Market):

- SPOT transactions: standard, client (corporate) with the possibility of execution through another currency;
- Urgent foreign exchange transactions (outright forwards): with the possibility of changing the date of execution (time option), renewable (takes up), with the possibility of execution through another currency (split currency), non-deliverable;
- FX swaps (FX SWAPS): standard, non-standard (non-round), roll-over (roll-over) and roll-back (roll-back);
- with the possibility of division into parts (multi-part), forward-forward (forward-forward), with the possibility of changing the date of execution (time option), renewable (takes up), client (corporate), investment (investment) with the possibility of execution through another currency (split currency). The most important characteristic of modern automation solutions for the front and middle office is the reporting received by the user in real time.[11]

In Kondor+ reports are automatically updated on users' screens when concluding transactions, changing market quotes, and limits using the means of delivering information from the server about "point-like" data changes, which allows optimal use of server and network resources. [12]

The well-thought-out and well-established work algorithms, as well as the technological solutions underlying the system, allow Kondor + to cope with large amounts of information, processing thousands of transactions per day, keeping positions on tens of thousands of instruments, overestimating them by quotes that change every second.

Kondor + has a modular structure - it is possible to acquire separate licenses for individual markets and introduce additional markets in stages as needed in accordance with business requirements. When expanding the range of instruments traded and increasing the size of a business, there is no need to buy separate systems. The customer uses a single database and consolidated reporting for all its operations. [13] (Figure 2 - Kondor + software)

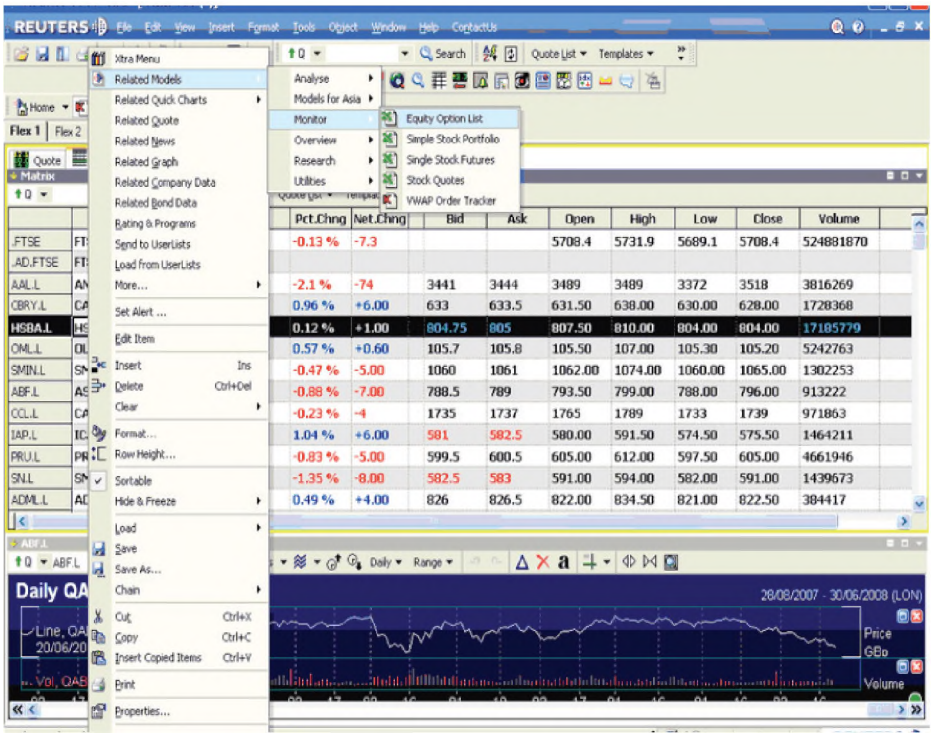


Figure 2 - Kondor+ software

CONCLUSION

Information technologies will continue to evolve and provide organizations with more and better capabilities in identifying, collecting, organizing, analyzing, and managing data. After conducting this research, it was analyzed that due to the extensive use of information and digital technologies in foreign companies in enterprises in the Republic of Kazakhstan need to choose the most suitable program to reduce losses from risks. The research provided examples of techniques and methods by which enterprises in our country can apply new methods to avoid risk, according to the law in the Republic of Kazakhstan, the integrated program "Digital Kazakhstan". [15]

Thus, companies need to follow a competent policy with the work of information and digital tools in combating risks. The Republic of Kazakhstan needs to move towards its goals: «accelerating the development of the economy in the Republic of Kazakhstan and improving the quality of life of the population through the use of digital technologies in the medium term», "Digital Kazakhstan". [15]

Thereby, it is necessary to reduce the risks and increase the profits of the companies in order to comply with the strategies of the «Digital Kazakhstan» program, bring our country to a new level of the economy and enter the path of strong growth.

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