

A Generalized Model of Risk Management in Digital Economy*

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Abstract. The necessity of transforming modern management systems under the influence of total digitalization is a vital and critical goal of social science and business. One of the key management fields is *risk management*. The main aim of the article is to define the characteristic aspects and main trends of risk management in the context of digitalization as well as developing a generalized model of risk management. Based on several approaches (the process, the complex, and the system ones), methodologies, methods, and trends of risk management, I developed a model of risk management in digitalization. I have formed a list of main trends of digital risk management and created a generalized model of risk management in the context of digitalization. The model can be used directly at enterprises because it integrates risk management and quality management, enables the management to control and evaluate the production cycle, the system development, expenses, and the necessity of timely adjustments and changes.

Keywords: Risk management · Risk · Quality management · Digitalization · Digital expansion

1 Introduction

During total digitalization, risk management is connected with the widespread use of digital achievements and network – based activity of stakeholders. Currently, stakeholders directly take part in the functioning of the organization, forming its status and public image in the common business space. Moreover, stakeholders influence monetary estimates of enterprise value and competitiveness. These changes influence all main principles and postulates of risk management theory. The principles of coherence, flexibility, processability, supportability, and innovation have top priority (Limonova, 2018). Defining the specific character, main trends, and risks of digital transformations in risk management is an urgent interdisciplinary problem of modern science and practice.

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2 Materials and Methods

Despite the great number of scholarly and business literature on digitalization and risk management, the issue is still understudied. There is a number of problems not covered by publications: (1) methodical aspects of risk management in the context of digital expansion in economics, education, social management; (2) defining the meaning and architecture of risk management in the new cluster of the digital economy; (3) forming new methods of evaluating the development of risk management in general.

There are many Russian and foreign studies on the risks of digitalization in the real sector of the economy (Vertakova, 2019; Plotnikiv, 2019; Chaldaeava, 2018; Manakhova, 2018; Udalov, 2018; Khodyrevskaya, 2013; Semernik, 2014). O. B. Veretennykova contributed a great deal to popularizing the triad *politics – strategy – tactics* in management and planning (Veretennikova & Shatkovskaia, 2012).

Development and specific features of digital tools and methods for management were extensively described in the reports and presentations of foreign scholars and specialists. The key aspects of introducing digital technologies, the integrity management principles, the influence of human resources on IT-service management were described in studies of Czech researchers (Ministr, 2016). The instruments of quality management, innovation management, strategy management, and planning were introduced in the works of foreign researches under the guidance of D. Meissner (Meissner, 2017; Scuotto, 2017; Del Giudice, 2018; Bresciani, 2017).

3 Results

Digitalization has spread its influence to all areas of life, meaning that digital transformations are both necessary and inevitable. Risk management tries to adapt to the toughest conditions of disagreement between the corporative management and the external digital shell. I point out such peculiar features of digitalization as *multidirectional* and *universal* nature. Under the influence of digitalization, whole new paradigms arise. I note that the implementation of digital technologies is severely lagging compared to the digitalization of society.

Every enterprise should revise the main management directions, taking into account the internal adaptation of digital technologies, the external digital “pressure,” and the digitalization level of the government where the organization works. The latter is especially relevant for the companies that have access to the international market. The trends of the digital transformation of risk management, depending on the type of corporative structure, are: *organizational* and *behavioral*.

One can include such characteristics into the *organizational* trend as:

- Development of a plan (full involvement into the plan of the corporate digitalization);
- Skill improvement (the improvement of skills and employing professionals to match the corporate development pace);

- Using new technologies (finding the right balance of competences to work with innovations);
- Timely application of essential measures (helping the organization to react to risks in real – time);
- Interaction with vigorous people (active involvement of managing directors into the key digital initiatives);
- Cooperation (cooperation and integrating efforts for working out a shared vision of risks).

The structure of the *behavioral* trend in the context of digitalization may include the following characteristics:

- Systemic modernization of tools working with information data (including Big Data) in the corporative environment of the organization;
- Real implementation, adaptation, and continuous improvement of risk management;
- Drawing attention to the digital segment of the market;
- Targeting the management system on innovations in all areas of corporate activity;
- Formation and development of digital skills and abilities;
- Stabilization of corporative relations, recruitment of staff on the condition of remote work based on a developed digital network.

The main approaches in the risk management framework are the *process*, the *complex*, and the *systemic* ones. In scholarly and technical literature, each approach is characterized in detail, so it is unnecessary to describe them. Based on the approaches, methodologies, and methods of risk management and the trends mentioned above, I would like to introduce the model of risk management in the context of digitalization (Fig. 1).

The *process* approach was taken as the foundation for the model. The task of clarifying the corporate internal environment (namely the philosophy and the politics of risk management) was solved using the *system* approach, in the framework of which the main elements of the risk management system were distributed. The *complex* approach enabled me to integrate the key areas of risk management and digitalization logically and intuitively.

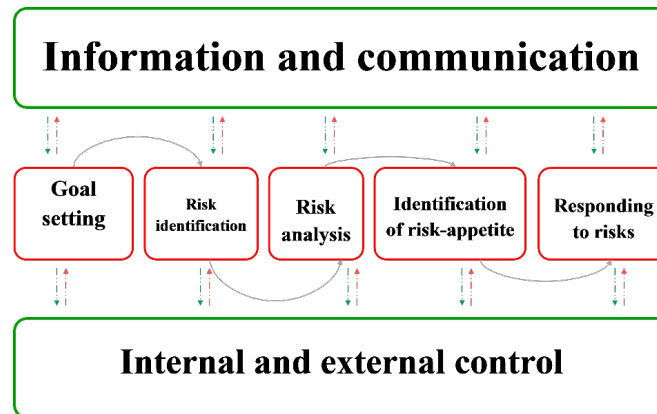


Fig. 1. The generalized model of risk management. *Source:* Compiled by the author.

4 Discussion

The offered model of risk management has the following advantages:

- The model can be used for creating a new concept of risk management in an organization, as well as one of the tools for strategic planning and decision – making;
- The model will allow regulating the expense portion necessary for digitalization activities as decreasing the costs (as a result of minimizing risks);
- The model allows modifying and introducing new activity areas, taking into account changing environmental conditions, and their ranging and structuring;
- The model can become an effective instrument of additional monitoring in estimating corporate efficiency, performance, and competitiveness. This will allow controlling the compliance with strategic benchmarks and aims of the organization.

The model not only systematizes the modern perceptions of levels and development directions of risk management but also reflects the *development – performance* dependence of both risk management and general management. The model can be used at enterprises because it integrates risk management and quality management, enabling managers to control and evaluate the whole production cycle, the result of system development, expenses, and the necessity of timely amendments.

5 Conclusion

To summarize the results, I examined risk management in the context of digitalization, formulated a complex of main trends that take into account the risks and latest achievements of digitalization, created an extended model of risk

management, and provided the advantages and limitations of the model.

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