

Personnel risk management in the quality management system of the digital company

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Abstract — The article deals with issues and problems of personnel risk management in the quality management system of a digital company. The problems of digitalization of companies in the conditions of the rapid development of information and computer technologies are being investigated. Personnel risks specific to a digital company are systematized by level of occurrence, by source of occurrence, by losses and by context of losses from the impact of personnel.

Keywords — personnel risks, digital company, quality management system

I. INTRODUCTION

Development of the digital sector of the economy is increasingly drawing into the formation of virtual profit-making systems, and information and communication technologies are becoming more and more widespread. By the beginning of 2019, the level of digitalization of companies in Russia remains low (Biesot coefficient (PB) = 0.48, which is less than 1), but the speed of digitalization gradually increases, increasing annually (Figure 1) [3, p. 37-40].

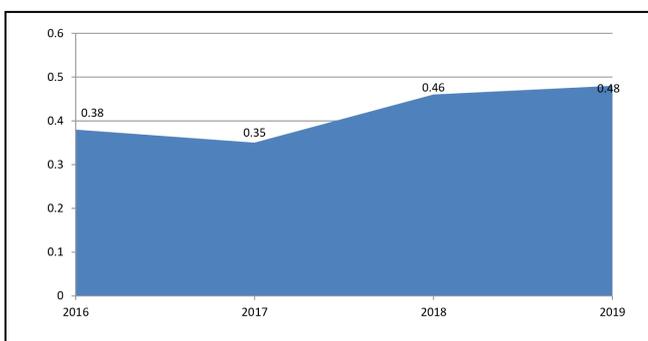


Fig. 1. Speed of digitalization of companies in the country (coefficient of Biesot (PB)) [15]

The digitalization process involves all companies, to a greater or lesser degree, taking into account the sectoral specificity, differentiated in the direction of the company's activity and resource endowment. There are general trends in managerial models [2]:

- First, virtualization of the production and economic activity fields [13, p. 552-553];

- Secondly, the decentralization of the board as the company's digitalization increases [14, p. 659].

The strongest digital changes occur in the field of quality management of goods as the main source for the company's capital creation. The specificity of digital changes in organizational models causes a transformation of the quality management system [8]. The quality management system acquires the character of openness, when consumers can take an active part in creating goods and services for their own needs, thereby becoming participants in the production process. This situation leads to the emergence of a number of risks and threats to the activities of organizations and enterprises.

In the new version of the quality standard ISO 9001: 2015 [1, p.7], the section structure is associated with all company management systems, and a risk management policy has been developed, which is based on corrective and preventive actions, instead of the traditional risk control measures.

Traditionally, the risk management system includes an algorithm of actions for finding, identifying, assessing risks, as well as developing methods to control and prevent risks.

At present, the problems related to personnel risks are of particular relevance in the field of quality management (fig 2). Traditional algorithms are quite suitable for personnel risk management; however, the existing methodologies within the algorithms do not take into account the specific features of the

digital company and cannot be applied to diagnose the level of personnel security in such a company.

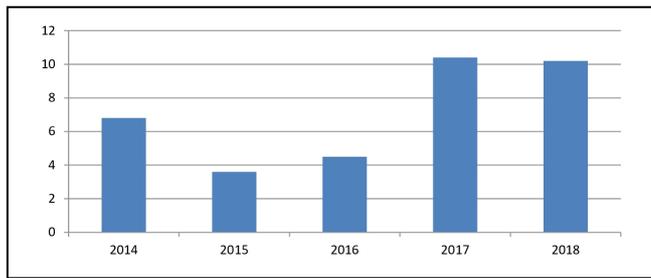


Fig. 2. Place of personnel risks in the rating of threats to the economic security of an enterprise [5]

II. MATERIALS AND METHODS (MODEL)

The main objective of the study is to study the personnel risk management system in the quality management system of a digital company. The main methods of identifying personnel risks are analysis and synthesis and comparison. It is worth noting that the sources of information were the works of Russian and foreign empirical studies, reports of official statistics services. The method of the author's research on the identification of personnel risks of digital companies is presented in Table 1.

TABLE I. ELEMENTS OF THE METHODOLOGY FOR IDENTIFYING PERSONNEL RISKS OF DIGITAL COMPANIES

<i>The main objective of the research</i>	<i>Methods of research</i>	<i>Sources of information</i>
Identification and systematization of personnel risks of a digital company	Analysis, synthesis, comparison, retrospective analysis	The data of the official state statistics service Reports of international and Russian studies

III. RESULTS AND DISCUSSION

In 2017, in the 13th edition of the global risks report prepared for the World Economic Forum by Marsh & McLennan Companies, the most significant risks of digital development in the world were highlighted, among which personnel risks take a special place. Experts attributed the risk of unemployment and underemployment to the key risks of the digital economy and found that it could cause deep social instability and lead to adverse effects of technological progress [11].

In 2018, Gartner analysts in a quarterly survey of company executives found that the main risk for them was a shortage of personnel with the necessary competencies to work in a digital company. Especially acute shortage of personnel is felt by large industrial companies, financial and manufacturing companies [12].

The lack of personnel with digital competencies may be unprepared for educational institutions, in particular higher education, to develop on the basis of ICT. According to

statistics for 2018, the number of computers per 100 students is 22, of which 17 have access to the Internet [4].

In a Gartner analytical report, company executives also point out that the risk of staff shortages exacerbates other risks in the company. They call artificial restraint of the company's digital development and lack of understanding of the concept of digital transformation of their own business the main risks for companies. Under these conditions, risk minimization is possible on the basis of cooperation between the business and the scientific community.

It should be noted that the interest of the scientific community to the problem of ICT development is increasing. The index of publication activity of Russian authors in scientific journals in the field of "Computer Science", indexed in the international system Web of Science in 2018 is 818 units, which is 2% more than in 2011 (364 units) [4]. The indicator of patent applications for inventions in the direction of ICT 792 shows a pronounced growth dynamics compared to 2011, where this indicator was 563 units [4]. Research and development of scientists can be used in the activities of companies to understand the directions of digital transformation and develop a business development strategy.

Scientist A.V. Sundukov in his research systematizes the requirements for leadership skills in organizations of the information sector of the economy. He identifies the following skill groups: individually-personal (high organizational adaptability, mobilization of work in the conditions of technological and informational changes, consideration of new economic opportunities for the formation of market segments associated with IT systems) and organizational-cultural ones, such as the ability to purposefully generate, to transform and direct emotional flows in a team, to create motivational precedents at the interpersonal level, to be able to localize information pressure, develop "information diet" [7, pp. 185-189]. Underdevelopment of digital leadership skills, which is an element of the quality management system of ISO 9001-2015 version, can become a source of personnel risks in the enterprise's activity and adversely affect the final indicators of the company's activities.

L.V. Shmelkova stresses out the main personnel risk of a digital company. It is a misunderstanding of how to use ICT in the real economic activity of organizations, inability to transfer the advantages of virtual reality into the real activity of the company [10, p. 1-4].

The study of the international company The Boston Consulting Group (BCG) revealed that in order for companies to complete transition to a digital development path successfully, it is necessary to replace the "Skill" and "Rule" employees for the "Knowledge" people. More than 50% of tasks involve analytical work, improvisation, creativity, work in conditions of uncertainty in "Knowledge". Researchers at BCG groups suppose that it is problematic to form employees of the Knowledge category in the Russian reality due to the lack of a critical mass of demand for knowledge from companies, and the fact that the education system does not prepare talents for the knowledge economy, and Russian society prefers stability to growth [6]. This leads to the

emergence of personnel risks associated with a lack of qualified personnel.

Scientist L.A. Chaldayeva in her report “Risks of the digital economy and control technology at the micro and macro level” pays special attention to the risk of declining professional skills. L.A. Chaldayeva writes that at the stage of introducing the digital economy it will be “unprofitable” for one to be a professional in his/her field of activity, since old professions will die off during the active working life and the person will be forced to change an occupation several times. In this situation, indifference is formed to the need to make efforts to learn if it is necessary to relearn and spend time and money each 5-7 years. If the old professions “die off”, and the new ones appear once in 7–10 years, then before a new profession appears, it is necessary to train specialists (4 years), and before that teachers who will teach new professions should be trained. However, these intentions should be accelerated and implemented in the system of advanced training, continuous retraining, but it is likely that by the time the teacher’s skills have improved, the profession will have begun to extinct [9].

The analysis of the studies which were carried out allows us to systematize personnel risks and to construct a schematic reflection of this systematization (fig.3).

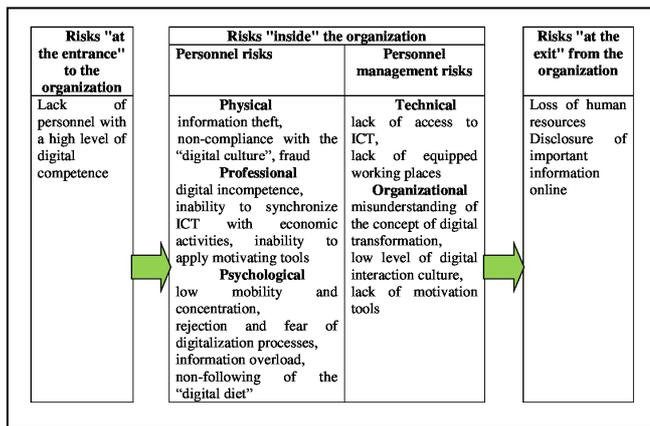


Fig. 3. Digital company’s personnel risks

The analysis carried out in this article made it possible to consider the identification block in the personnel risk management system within the quality management system. It was possible to systematize personnel risks:

- firstly, by the level of occurrence: mega-level (risks of unemployment and part-time employment), macro-level (underdevelopment of competencies of university graduates) and micro-level;

- secondly, according to the source of occurrence in the company: external personnel risks associated with personnel management and internal personnel risks associated with personnel;

- thirdly, according to losses and context of losses from the impact of personnel risks.

IV. CONCLUSION

The impact of personnel risks causes negative effects on the company's activities, which include:

A. Reduction of the company's customer-orientation, which may be caused by a lag in the development of employees' skills from customer requirements or the company's inability to provide a digital improved product or service to the client's needs;

B. Psychological rejection and fear of the digitalization process, and therefore its artificial inhibition may force consumers to leave the company, which will cause financial losses;

C. The inability to operate customer relations in a digital environment can lead to serious image losses for the company;

D. The lack of a “digital culture” of relationships in a team can lead to fraud (the use of personal data, passwords) or reckless behavior online (posting photos from the workplace) which can weaken the company's economic, scientific, technological and other types of security;

E. The impact of personnel risks has negative manifestations not only in the form of financial losses, but also legal ones, and it entails costs in case of legal proceedings on the facts of employee fraud, consumer complaints, and the like.

Directions of further research can be the study of other stages of personnel risk management in the quality management system, namely the assessment of personnel risks. It is necessary to make a risk assessment of the following indicators: the probability of occurrence, the amount of losses, the speed of approach and the duration of action.

References

- [1] GOST R ISO 9001-2015. National standard of the Russian Federation. Quality management systems. Requirements. - M.: Standardinform, 2015. - p. 7.
- [2] Kadomtseva S.V., Manakhova I.V. The modern paradigm of socio-economic development: Part 1: The Information Revolution // Bulletin of the Saratov State Socio-Economic University. - 2017. - № 5 (69).
- [3] Limonova E.V. Digital Companies: Definitions and Attributes // Economic Security and Quality. - 2018. - № 1 (30). - p. 37-40.
- [4] Official site of the Federal State Statistics Service. Digital economy of the Russian Federation. [Electronic resource]. - Access mode: http://www.gks.ru/free_doc/new_site/figure/anketa1-4.html (access date: February 13, 201).
- [5] Panteleyeva T.A. Systematization of personnel risks in the context of their impact on the economic security of business entities // Bulletin of Eurasian science. - 2018. - № 4. - Volume 10. - P. 57 - 62.
- [6] Russia 2025: from staff to talents [Electronic resource]. - Access mode: <https://www.bcg.com/ru-ru/default.aspx>. (February 13, 2019).
- [7] Sundukov A.V. Leadership as a management technology for the development of organizations in the information economy // Bulletin of the Tambov University. Series: Humanities. - 2014. - № 11 (139). - p. 185-189.
- [8] Tikhonovich E.A. Influence of social infrastructure on the reproduction of human capital // Bulletin of Volgograd State University. Series 3: Economy. Ecology. -2012- № 1. - p. 22-28.
- [9] Chaldayeva L. A. Risks of the digital economy and technology of control at the micro and macro level [Electronic resource]. - Mode of access:

- http://www.debaty.club/sites/default/files/dd2017/Chaldayeva_Kilyachkov_Presentation_DD2017.pdf (12.02.2019)
- [10] Shmelkova L.V. Personnel for the digital economy: a look into the future // Additional professional education in the country and in the world. - 2016. - № 8 (30). - p. 1-4.
- [11] The Global Risks Report 2018 [Electronic resource]. - Access mode: <https://www.marsh.com/ru/ru/insights/research-briefings/the-global-risks-report-2018.html> (access date: 13.02.2019).
- [12] Gartner: The main risk for companies in the digital economy is now a global shortage of personnel [Electronic resource]. - Mode of access: <https://zen.yandex.ru/media/id/5aa658de168a91aa24b5443f/gartner-glavnym-riskom-dlia-kompanii-v-cifrovoi-ekonomike-stal-globalnyi-deficit-kadrov-5c496ccafad3ae0597753879>.
- [13] Limonova E.V., Manakhova I. V. Socioeconomic Leadership of Research: Leadership for the Future Sustainable Development of Business and Education. Springer Proceedings in Business and Economics. Springer, Cham 2018. - PP. 551-558.
- [14] Limonova E., Domnicheva A., Manakhova I. Digitalization of companies competitive development // Advances in Economics, Business and Management Research (AEBMR). Competitive, Sustainable and Secure Development of the Regional Economy: "Response to Global Challenges" (CSSDRE 2018). - 2018. - Vol. 39. - PP.659-662.
- [15] The methodology for calculating the level of digitalization of companies is carried out on the basis of calculating the coefficient of Biesot (PB) = CPE / CPA, where CPE is the level of digitalization of the company and CPA is the rate of outrage or threat (the level of digitalization of society). CPE is calculated annually by ABBYY (31% by 2019). CPA is measured by calculating the average of three sub-indices: the sub-index of access to information and communication technologies (hereinafter referred to as ICT); ICT usage intensity is measured by ICT usage sub-index; The ICT impact sub-index shows the social and economic effects achieved as a result of the use of ICT by the population (64% by 2019).