

# Systematization of the Activity Digitalization Risks: Economic, Cultural, Political, and International Aspects

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**Abstract**—The article includes the study results of the negative activity digitalization consequences at all levels of public life. Moreover, the emphasis is made on prevention of risks that are possible due to the negative impact of digitalization. However, it is fair to note that the traditional consideration of the negative digitalization effects often ignores the possible opportunities hidden lying behind the negative assessments. The identification and systematization of the activity digitalization risks is aimed at establishment of the behavior scenarios for all participants in social interactions, namely the individuals, households, legal entities, economic sectors, and national economies. The study results are aimed at substantiating the managerial decisions in the economic, labor, cultural, political and international life of the information-oriented society. The crucial significance is attached to the ability to reduce information uncertainty in relation to the activity digitalization and efficient allocation of resources for the identified risk management.

**Keywords:** *activity digitalization risks, economic, cultural, political and international aspects, risk management*

## I. INTRODUCTION

The relevance of the study of digitalization in modern society is due to a number of reasons:

- ensuring the competitive advantages of the Russian economy based on digital technologies;
- reduction of information uncertainty in the activities of all subjects of public relations when making decisions in the context of a global transition to digital business transformation;
- the need for urgent adaptation of individuals, households, business entities, industries and the entire national economy to new business processes built on the principles of digitalization in order to compare the

approaches to communication of participants in international projects.

It is important to note that only an integrated approach to assessing the risks of digitalization will objectively substantiate decisions and allocate resources in a rational way.

Digitalization of activity is relatively recent, but rather rapidly entered modern reality. The development of digitalization problems is carried out by scientists, practitioners, businessmen, research groups and structures representing various fields of activity. Particular attention is paid to digitalization by the government, which is reflected in the national program "Digital Economy of the Russian Federation" [1].

In this regard, it is difficult to single out specific authors, especially foreign ones, whose studies of digitalization problems could be assessed like basic and fundamental. However, among Russian representatives, it is worth noting the scientists of Tomsk State University, who generalized the consequences of digitalization on the basis of socio-economic analysis [2] and rated the role of the state in the development of the digital economy [3]. The effectiveness of digitalization in Russia, as well as the possibility of state support for business in the context of digitalization, was evaluated by scientists of the State University of Management [4, 5]. Representatives of the Samara State University of Economics proposed considering universities as centers of digitalization in the regions [6, 7].

Thus, attention to the problems of digitalization has increased markedly. However, rapidly changing economic, political, social, technological conditions lead to permanent instability of the information environment. This leads to the uncertainties and to the risks of digitalization.

## II. METHODS AND RESULTS

The study is based on the results of assessing the effects of digitalization in the modern Russian and world economy.

Also the provisions of the passport of the national program "Digital Economy of the Russian Federation" are analyzed.

The legal basis is the provisions of the Doctrine of Information Security of the Russian Federation (Decree of the President of the Russian Federation No. 646 dated 12/05/2016), the Federal Law "On Information, Information Technologies and the Protection of Information" (No. 149-FZ of 07/27/2006)

### A. *Generalization of economical, administrative risks of digitalization*

The group of economical and administrative risks of digitalization, first of all, includes the increasing complexity of activities. This is due to technological reasons - the contractor is forced to supplement his purely professional competencies with knowledge in the field of high information technologies (for example, working with BigData, the Internet of Things, neural networks, etc.). This knowledge, of course, will strengthen the competitive advantages of the employee and are aimed at increasing labor productivity. However, it would be unfair to perceive the increasing complexity of activities. Due to the development of digitalization, the acquisition of additional professional knowledge can be, among other things, a positive result of digitalization. The emergence of expert information systems will simplify communication to obtain the necessary competencies and skills.

Digitalization is expected to exacerbate the industrial crisis. On the one hand, this is explained by the need to adapt all participants in economic activity to the transition to digital processing of large amounts of data [8], the formation of digital doubles of all types of goods, works, services and accompanying business processes. This adaptation period can be quite long and partially block business opportunities at this stage of development [9]. It is fair to say that even if digitalization aggravates the economic crisis, this period will not be long, because and the process itself is characterized by a gradual transition to digital technology. Consequently, one can also gradually respond to changing business conditions. On the other hand, the radical changes associated with digitalization can bring business to a new level of competitiveness.

A potential threat to digitalization in economic activity is massive unemployment. This threat may arise due to the disappearance of some professions that are losing relevance in the context of digital business transformation. Some of the tasks traditionally performed by man will be delegated to intelligent systems and will lead to staff reductions. Also, the reduction in the number of employees may be the result of acceleration, optimization and rationalization of business processes on a digital basis. Moreover, production itself may be reduced due to the possibility of producing only high-quality products without defects in general through preventive modeling - the creation of digital product doubles [10].

However, digitalization can lead to the emergence of fundamentally new professions related to the planning, maintenance, synchronization, administration of economic processes on a digital basis.

It is assumed that digitalization will cause active migration processes and form new requirements for staff mobility [11]. Of course, the use of information and communication technologies of a new level now leads to the fact that the business is not tied to the territories. It can develop simultaneously in real and in virtual space. In this regard, office work, marketing, design, technological preparation of production activities and sales partially move to the information space, which does not need a constant presence at the workplace of performers. The implementation of tasks to ensure the activities is carried out remotely, often online. Moreover, of course, it is not possible to transfer all activities to digital space due to the objective materiality of the production of most goods. Thus, the location of production will clearly focus on proximity to resources or markets [12], and the human factor (labor market) will be minimized in this matter.

The stress intensity of labor is considered another risk of digitalization [13]. This is explained by the avalanche-like accumulation of information in the labor process and the need for individuals to rationally identify, generalize, systematize huge data sets in the formation and development of professional and supra-professional competencies. The acceleration of the synthesis of scientific knowledge, of course, causes the acceleration of business processes that require immediate response from all participants in economic activity. Therefore, the rate of assimilation of new knowledge should also be high, which is associated with a high level of stress. In this regard, the concept of human education throughout life is seen as an objective need to replenish the luggage of knowledge to ensure competitive advantages in the labor market [14, 15]. At the same time, it seems possible to reduce stress intensity through the gradual accumulation of knowledge.

### B. *The risks of digitalization in the field of culture and society*

Due to the fact that the education system and culture of the nation are the basis of the economy, it is important to understand the threats from digitalization in this area.

The "automation" of man and the transition to technocratic thinking in the process of digital transformation of business and society as a whole are forecasted. An opportunity is expected to globally formalize any phenomena, even those that are traditionally considered not formalized (for example, smells, emotions). The technology of the digital double will eventually allow us to find a digital model of these phenomena. It is these tendencies that cause concern that digitalization will even affect the emotional sphere, partially depriving a person of his personality. However, these concerns are premature and not always justified. Firstly, there is no recorded activity in terms of research in this direction. Secondly, simulation modeling of behavior, for example, of consumers, is already underway, but this is not a risk factor. On the contrary, it excludes numerous experiments with

human participation, simulating various scenarios before the start of production in order to justify and prevent all possible negative consequences of activity in the case of a “live” experiment. It is important to note that in the conditions of a rapid change in the factors of the information environment, the “automatism” of a person can be considered from the point of view of a symmetrical, operational reaction to these changes. And technocratic thinking will allow the development of additional competencies of professionals in the new digital economy.

An avalanche of information is seen as a typical digitalization risk. As noted, the synthesis of scientific knowledge and the accumulation of data in the information space are accelerating. This situation, at the same time, leads to new opportunities for those who have transformed accumulated knowledge into established competencies, and to the effect of “oversaturation” with information and knowledge. For individuals, this is fraught with stress, a decrease in the concentration of accumulated baggage of knowledge, and professional confusion. For society, an avalanche of information causes problems in complicating the search for necessary and sufficient knowledge in each case. Therefore, understanding the problem already implies intensifying the search for its solution.

In developing the problems of the avalanche of information, it is necessary to pay attention to the potential risk of polarization (elitism) of knowledge due to digitalization. This negative outcome is possible due to the fact that the avalanche-like process of accumulating scientific knowledge, as well as their active implementation in business processes, is now considered as a strategically important factor in ensuring the competitive advantages of each specific economic entity and the national economy as a whole. That is why the main struggle in the world market is unfolding for carriers of exclusive knowledge and products of artificial intelligence. In addition, artificial intelligence can act as an independent source of synthesis of scientific knowledge. Consequently, business and national economies will fight for intelligence (living and artificial) as a strategic resource and factor of production. Identification and understanding of this risk gives motivation to search for ways of optimal, rational use of valuable knowledge, bringing the highest benefits.

It is predicted that digitalization may be accompanied by a decline of the cultural level of society. Probably, this conclusion was made due to the expectation of the impact of the risks of human “automation” and the transition to technocratic thinking. But this conclusion cannot be regarded as indisputable. Digital transformation affects not only business, but also social life, communications. Moreover, the active use of digital technologies in the field of culture can expand the development opportunities of individuals. The information space allows you to access previously inaccessible cultural values (for example, virtual tours of world museums, access to libraries, video, photo, audio materials of cognitive, educational, aesthetic orientation). Moreover, facilitating and reducing the cost of access to information resources contributes to the free development of the individual [16].

### *C. Political Risks of Digitalization*

An important component of the public life of the state is the political situation. Therefore, it is necessary to identify the risks of digitalization in this area with a focus on managing them.

A decrease in freedoms and increased manipulation of people by the state based on digital technologies is expected. This risk is likely due to the emergence of technical and software capabilities for the accumulation of data about each individual person through “information prints”. This means that personal data is accumulated according to the results of registration actions (data from the registry office, FIU, Ministry of Internal Affairs, biometric passports, questionnaires and cards in hospitals, shops, data from the personnel departments of employers, etc.). Also, information traces about a person remain in social networks and messengers, when using mobile communications and the Internet, and a bank card. Therefore, the state, in fact, has mechanisms for tracking personal data, calls, and correspondence of citizens (Yarovaya’s law), which allows for total control. However, the problem is not so much in the fact of tracking data and information about an individual, but in their correct identification (for example, the extremist nature of the message or an inappropriate joke).

The expansion of state bureaucracy is also expected as a risk of digitalization in the political sphere. The national program “Digital Economy of the Russian Federation” [1] is aimed at expanded participation in the public life of every citizen, simplification of communication between citizens and state structures. Organization of interaction between the state and citizens on the basis of the “single window” principle has already been implemented on the State Services portal. However, to avoid bureaucratization, even with the transition of communications to the information space, it is completely impossible. Although it is hardly necessary to unambiguously negatively assess this result. Following the requirements, clear regulations should not be perceived as a threat. Moreover, digital technology involves following a certain algorithm, scenario, i.e. objectively is “bureaucratic”. Therefore, this risk is not considered critical and requires the rejection of digitalization.

It is expected that not only certain individuals, business entities, industries, but also the state as a whole, possessing exclusive knowledge, strengthen their power. However, with regard to the state, this threat is viewed from the perspective of manipulating people as voters or taxpayers. In this regard, of course, such state actions should be regulated, first of all, on a legal basis. But, at the same time, one should not react so sharply to the potential threat of strengthening power thanks to new knowledge. Firstly, a legal, socially responsible state is itself not interested in strengthening power to the detriment of citizens. Secondly, business often has more opportunities to gain valuable knowledge, not only to ensure competitive advantages in the market, but also to protect it from excessive state power.

Centralization is seen as another possible risk of digitalization. On the one hand, this is explained, first of all, by the possibilities of control by the state on the basis of

accumulated personal data through “information traces”. On the other hand, centralization is determined by the structure of the information space and the presence of global networks. However, the risk of centralization is also twofold. Along with providing opportunities to control and manipulate citizens on the basis of information systems, centralization allows you to: unite huge Russian territories in the information space; align the hierarchy of power; provide direct communications between branches of government and citizens, etc. It is also important to note that at the same time as centralization, personal computers and other individual gadgets make it possible to ensure decentralization (local activity of an individual). Thus, digitalization allows you to simultaneously take advantage of both centralization and decentralization.

#### *D. Digitalization Risks in International Relations*

Global processes of development of the global economy dictate the need to adapt international relations to the conditions of digitalization.

Digitalization predicts the risk of vulnerability of nations. The main conditions for the occurrence of this risk are global networks and the digital transformation of the sphere of national and internal security of states. In this regard, the vulnerability of nations is possible due to the threat of unauthorized access to the databases of strategically important state structures. Also, the vulnerability of nations is fixed at the level of lag in the development of digital technologies of specific states in comparison with other participants in international relations. Consequently, in the context of digitalization, states need, first of all, to direct their main efforts to the technical, organizational protection of data that are of particular value in the interests of a particular nation. And again, in this regard, the question arises of competition for the owners of elite knowledge to ensure the competitive advantages of the national economy on a global scale.

Digitalization contributes to the free development of international relations in the political, economic and social context [17]. It is predicted that economic ties will develop mainly in the field of technological superiority. At the same time, the coverage of the global economy with global networks and wide possibilities of various communications will lead to the appearance of chances to borrow high science-intensive technologies even by those countries that do not have high intellectual potential. Consequently, new development prospects appear for such states, and for donor states of intellectual resources, this is a threat of losing part of market power. However, this conclusion is ambiguous. States with a high level of development of intellectual resources will also receive additional benefits from the transfer of high technology [18, 19]. First, technology is an expensive commodity with increasing demand. Secondly, modern technological solutions in the field of material production, primarily aimed at solving environmental problems. Consequently, the transfer of such technologies to states that do not have their own resources for the development of environmentally friendly production will receive the global effect of reducing the overall level of environmental pollution. On the other hand, the interdependence of countries will increase, caused by the need for regular replenishment of

baggage of new data in the context of accelerating the synthesis of scientific knowledge, technological dependence on “intelligent” nations [20]. However, this dependence can to some extent lead to a smoothing out of even political differences.

The growing danger of a new war due to the renewal of military systems is considered a serious threat to digitalization. The introduction of digital technologies in the sphere of national security, of course, provides new defense capabilities, new military technologies, and new types of weapons. This is facilitated not only by the intellectual resources of developed countries, but also by the development of artificial intelligence that synthesizes new military solutions. However, no digital technology can guarantee absolute protection of military systems from unauthorized access by the enemy yet. Moreover, security systems are still likely to be triggered due to technical and software failures even in modern military systems, mainly designed with an emphasis on leveling out the influence of random factors. But digitalization should be considered with caution in the context of the risk of increasing military danger in the world. Broad development opportunities have been gained not only in the development of offensive weapons, but also in a defensive, defensive system, which just levels the risk of unleashing new military conflicts.

### III. DISCUSSION

The transition to digital transformation of all areas of activity is accompanied by potential threats, the identification of which serves the purpose of proactive management of identified risks.

Thus, a generalization of the risks of digitalization in the economic, cultural, political and international spheres allows us to proactively build scenarios of the behavior of individuals, households, industries, national economies when implementing specific decisions in the context of digitalization.

### IV. CONCLUSIONS

In this regard, it is important to note that the national program “Digital Economy of the Russian Federation” [1] provides, first of all, for an increase in domestic costs for the development of the digital economy, which is about 1.7 trillion rubles. Of course, the main financial burden on these costs will fall on business and households. But at the same time, budgetary funds for the implementation of federal projects on digitalization of the Russian Federation are taken into account: “Normative regulation of the digital environment”; “Information Infrastructure”; “Personnel for the digital economy”; “Information Security”; “Digital technologies”; Digital Government. Of course, an effective transition to digital transformation is possible only in conditions of reducing information uncertainty and the development of a digitalization risk management system.

The main scientific result is the generalized digitalization risk system in order to proactively respond to the risk factors and justify the allocation of resources to the digital transformation of the business.

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