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**CONCEPTUAL BASES OF SOCIAL EFFICIENCY OF THE  
DIGITAL ECONOMY**

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*Abstract*

In the conditions of the digital economy system dysfunctions are deeply illustrated in the social sphere. Firstly, it is labor market, culture and education. In spite of the fact that there is no uniform correct answer to the question about a ratio of economic efficiency and social justice, digital transformations necessitate search for new concepts. So, scale reflections of digital transformations on the social sphere cause search for new approaches and criteria to the concept of social efficiency of the digital economy. Forming conceptual bases of social efficiency of the digital economy, as a methodological basis, the authors used the theory of X-efficiency, the theoretical provision about conditions of synergetic efficiency of the digital economy, traditional and institutional approaches to determination of social efficiency and also authors' determination of social risks of the digital economy. The interrelation of social risks and social efficiency is revealed. It is caused by the fact that in the conditions of the digital economy social risks are connected with emergence of the destructive phenomena in society under the influence of digital transformations. The study considers possible institutional dysfunctions and social pathologies, threats and risks as adverse events at digital transformations. Such events are connected with features of distribution of different communication forms, with features of economic activity and transformation of labor relations, with gender and age features of society which has undergone digital transformations.

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**Keywords:** Digital economy, social efficiency, social risks, social dysfunctions, synergetic efficiency.



## 1. Introduction

According to the definition of the World Bank, the Digital economy is a system of economic, social and cultural relations, the main principle of which is the use of digital information and communication technologies (The World Bank, 2016). These processes are changes in the technological mode. History demonstrates that the change in modes was always followed by social upheaval. Formation of a new mode connected with distribution of digital technologies is not an exception, and the digital economy poses social challenges and threats besides great opportunities.

## 2. Problem Statement

A wide social layer of economy digitalization is capable to solve certain social problems by means of simplification of communication processes of state, business and civil society; through the quality enhancement of social services, labor productivity, emergence of new business opportunities and opportunities of work; through education and expansions of professional competences, etc. By means of technologies there is a transformation of labor relations. Freelance becomes the most common form of work and implementation of various projects. Possibilities of digital transformations are so big that decisions and more difficult social tasks connected with overcoming biological limitations of human potential will be possible by means of high technologies. The social sphere will be filled with robots which are able to look after patients, to deliver purchases, to harvest, etc.

As for education, it has been actively exposed to processes of digital transformations for a long time (online courses, online teachers and new techniques, tablet technologies). Education, science, culture, mass media are key areas of digitalization, being at the same time its inhibitors and giving great opportunities for continuous education and professional development. The main mission of education when forming and developing the digital economy is to provide knowledge and skills to people that meet the requirements of digital labour and society of knowledge.

At the same time, processes of digitalization have a dual character, and it means that there are both wide opportunities and also threats and dysfunctions caused by low welfare and high differentiation of the population; cultural and mental features, insufficiently effective legislative base, lack of effective mechanisms of protection, etc. Ambiguity of digital processes means a certain degree of probability of those other events, such as risks.

Tendencies of digitalization will change the structure and principles of work in general. The developed organizational forms can be characterized as “economy of free earnings”. In similar conditions a low level of the wage, lack of privileges and economic vulnerability is noted. In general, investments into digital technologies cause reduction of jobs, stagnation of the wage and growth of pay gap that adds to the differentiation problem in welfare.

The processes happening under the influence of digital transformations turn the human into the category of goods identified by the information system from the set parameters, turning him into a certain operated “bio-object”, and safety of the human becomes imaginary because of easy access to information concerning bank accounts, electronic correspondences, phone calls, etc. (Cohen, 2018).

Some professions will die off when digital technologies are distributed. But new professions will come instead. But experts for these professions need to be trained, it will require time and also the

corresponding teachers who will train in new professions have to be trained. These tasks, of course, can be reached by means of professional development of teachers, but all the same there will be a big time lag between perception of necessity of a new profession, training of corresponding teachers and training of specialists. For this period the profession can already lose the demand and relevance. It can even die off.

A big layer of social problems is connected with integration of people of elderly age into digital professions (Vishnevskaya, 2017). New job retraining of elderly people (taking into account age specifics) will move them to less qualified and, respectively, to less paid positions. All this will form the atmosphere of social tension when qualified professionals get the worst of it, than unskilled experts as the process of their transition from traditional to digital production technologies will be long. And at the stage of implementing the digital economy, it will “be unprofitable” to be a professional of the area since old professions will disappear and people will be forced to change professional orientation several times during their active labour life (Latova, 2018). The similar situation will form the indifferent attitude towards training if people have to retrain in 5-7 years, and, therefore, they have to make investments and spend time.

Another problem turns up because of the developed stereotype concerning the fact that information technologies are a men’s field of activity and it is confirmed by facts. So, for example, among winners and prize-winners of the All-Russian Olympic Games of school students on Informatics in 2017 there were 116 boys and 19 girls (14%). 80% of students at University Innopolis are young men. At the same time it is possible to enter this university only having won a grant on training, so girls either do not participate in competition, or they do not win against young men. According to Informal Statistics, in Russia only a half of girls who received IT education found a job in this specialty. According to data of Rosstat, in Russian economy in general the share of women in IT industry does not exceed 23, 0%: among workers of the highest level of qualification it makes 21,6%, an average — 24,2% (GKS, 2018).

The variety of communication forms and the continuing growth of alternative ways of interaction lead to the fact that degree of predictability of behaviour decreases. Besides, new opportunities for the organization of collective action are capable not only to help with the solution of specific questions, but also can lead to manipulations, suppression of personal assessment of events. Besides, the variety of forms of communications is also transformed by social norms. Traditionally social norms are set by conditions and the corresponding instruction (Orekhova, 2017). But now it is difficult to select instructions in traditional understanding (as specific actions). It is connected with increase in speed of changes in social processes, public changes, and increase in variability of institutional behaviour. Also, digital technologies in the field of communication and mass communications more and more actively influence the formation of social micro-cultures which, in turn, not always adhere to standard social values.

Thus, on the basis of the above-mentioned facts it is necessary to formulate a conclusion about ambiguity of the digital economy concerning its impact on the social sphere, namely that digital transformations of economic life can turn back as expansion of opportunities, and a wide range of adverse events. This circumstance necessitates revising the approach to determination of social efficiency of the digital economy and to determination of criteria (Budlender, 2010).

### **3. Research Questions**

Justification of conceptual fundamentals of the digital economy is obviously possible considering a number of questions and solutions of certain tasks. So, first of all the facts testifying to ambiguity of consequences of the digital economy are defined. Further it is necessary to consider the theoretic-methodological tool allowing the available concepts and theoretical approaches to transplant to a new level, the level of the digital economy. It gives the chance to reveal criteria of social efficiency of the digital economy in order to prove the ways that enhance it.

### **4. Purpose of the Study**

On the basis of analyzed facts which concern positive and negative impacts of digital transformations on the social sphere, using various approaches to the determination of social efficiency, taking into account features of emergence of social risks in the conditions of the digital economy and being guided by the concept of synergetic efficiency it is possible to formulate conceptual bases of social efficiency of the digital economy.

### **5. Research Methods**

Firstly, the thesis about irreversibility of the digital economy as an initial element of a new economic mode is a methodological basis of the study. The facts illustrating cardinal changes of relations of property with means of production, changes of production relations in the conditions of the digital economy allow selecting this thesis as paramount.

On the other hand, the process of total digitalization of the economy and society in general is impossible as having identical resources different economic systems can function with just the opposite results. Culture, health, the level of education and the previous development pathway - all these factors finally define operating results of the economic system which has undergone digital transformations. And thus the thesis about asymmetry (spatial, branch) and asynchrony of digital transformations acts as the following methodological provision (Volchik & Maslyukova, 2018).

The following basic element of the methodological basis of the study is research of economic systems of O.S. Sukharev, namely dysfunctions and efficiency of economic systems (Sukharev, 2001, 2010). Within the approach, based on the theory of X-efficiency, efficiency of the economic system is a possibility to detect and use the unused resource which potential allows creating a new made product (income). In a different way, taking into account all opportunities the release and/or efficiency could be higher. In the conditions of digital transformations such approach to determination of efficiency through opportunities detecting and using additional resources is advisable. And in the light of this approach, the digital economy is not a goal, but means enhancing efficiency of economic system functions in general, and system dysfunctions act as powerful limiters of effective use of digital mechanisms, leading to a lag in the development and to a decrease in welfare, and, respectively, to a decrease in social efficiency.

When analyzing the essence of social efficiency, different approaches to its understanding are affected. So, in broad understanding social efficiency can be presented as the process that enhances welfare of society where the most important indicator is the index of human development.

Within the institutional approach social efficiency is considered by means of the concept of the social capital where social networks, social norms, trust, etc. act as units of the capital. The social capital strengthens return from other forms of capital and in general enhances efficiency of economic activity, accelerating economic development.

The narrow interpretation of social efficiency assumes positive return from social investments which are carried out both at state and corporate levels. Here the positive social effect will mean satisfaction of material, spiritual or social needs; increase in welfare of the population, growth of intellectual, cultural activity, etc. But at the same time borders between “social” and “traditional” are very conditional as any investments can have positive externalities. In this regard, if investment goals could be economic and social, then these investments can be referred to social investments. Respectively, in the conditions of the digital economy with investments into digital technologies which are in one way or another connected with the sphere of human activity, there is no border between economic and social goals (Kiss, 2017; Pyzhev, 2018).

The corresponding social risks are peculiar to the social sphere. In traditional understanding social risks represent dangers and threats of essential changes in the person’s social status which are caused by ineradicable social and economic reasons for this society. Poverty, unemployment, occupational disease, etc. acts as examples of such risks (Vodyanenko, 2016). The new social risks arising in connection with modernization of economy generally in literature are grouped in such directions as: a need to combine the family and work, especially when the situation concerns care of children and aged persons; a loss of a guarantee of social protection, a lack of knowledge, skills which are necessary for search for continuous and adequately paid work.

In aspect of the digital economy the understanding of social risks and a range of their activity significantly extends. In the similar situation of uncertainty and lack of possible exact forecasts for the future, amplitude of consequences of digital events fluctuates from opening of new opportunities to adverse, up to destructive events (Chubarova, 2015).

Besides, the study represents the assumption of the maximum involvement of principles of institutional planning in the conditions of formation of the digital economy that is one of the directions to enhance its social efficiency (Sukharev, 2012).

The institutional changes connected with distribution of digital institutes and in general with the development of the digital economy often overtake possibilities of agents and other institutes, result in dysfunctions of the development and interaction. Emergence of a new institute of the digital economy causes a certain set of reactions connected with goals, definition of field of efforts, functional diversity, costs of institutes and agents’ activity, resistance to a mutation in a spontaneous order, etc. (Tambovtsev & Christmas, 2018).

Institutional planning of the digital economy assumes the need to accept in attention modes and pathways which are set for this system. And then the prevailing motives, that is the system of preferences and possible reactions of agents, will act as priorities of institutional planning of the digital economy. Realization of institutional planning of the digital economy has to be at various levels (a country, a region, a branch and even a separately taken firm or a household) with certain specifics. Difficulties at

institutional planning of the digital economy could be the following: algorithms applied to one system can be absolutely passive for another.

## 6. Findings

In the conditions of the digital economy the social risk is understood as the social event, which connected with dangerous consequences of digital transformations and demanding accounting, control and regulation of a social situation enhancing efficiency. Integrating traditional and institutional approaches to determination of social efficiency and approach to efficiency of the digital economy through synergetic efficiency, social efficiency of the digital economy reflects the extent of determination of social risks under the influence of digital transformations affecting all social groups of society. A low extent of determination of social risks produces constructive tendencies in the social sphere that positively affects welfare of society. A high extent of determination of social risks brings to a social problem, to a split of society and decrease in its welfare.

Factors setting a high probability of social risks are formation of subcultures with destructive social norms; inadequate behaviour and decision-making, norms of behaviour according to dynamic changes of institutional climate, norms, rules, etc.; cultivation of a public stereotype about failure of women in the sphere of information technologies; social tension among the people of elderly age losing the qualification and forced to be retrained; polarization of income and degradation of borders of “social protection” institute in the conditions of “economy of free earnings”; lack of teachers, who competent in questions of training digital experts.

## 7. Conclusion

In order to enhance social efficiency of the digital economy, it is necessary to introduce the principles of institutional planning at all levels of the digital economy, to develop an independent monitoring system to assess, analyse and forecast consequences when introducing institutes of the digital economy and new digital technologies to different spheres of human activity.

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