Digitalisation of the Economy of Social and Labour Relations in Modern Conditions

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Abstract. The authors represent data on the state of the process of digitalisation of the Russian economy and draw a conclusion about the high level of the information infrastructure development along with that they note a great gap in the digitalisation level between regions. When assessing the impact of the development of Internet technologies on employment, two main consequences have been identified: the reduction of the impact of the geographical factor on the supply and demand in the labour market and the involvement of previously unoccupied social groups in the production process. The rapid development of the digital economy, the accelerated industrialisation of digital technologies such as the Internet, big data and cloud computing, have led to further improvements in computing power, a significant reduction in computing costs, and a significant leap in data analysis and processing capabilities. The purpose of the study is to analyse and evaluate the effects of economy digitalisation on employment. Within the framework of the research conducted, both general scientific and specific scientific methods were used: formal and logical research methods (the method of induction, deduction, analogy, synthesis, comparison, observation, description, systematisation), formal and legal, historical and legal, comparative and legal, institutional, system analysis. The paper analyses the current global economic and technological trends that affect the transformation and formation of new socioeconomic relations in the context of the digital economy formation. This article examines the impact of the development of digital information technologies on the labour market and employment. The authors represent data on the state of the process of digitalisation of the Russian economy and draw a conclusion about the high level of the information infrastructure development along with that they note a great gap in the digitalisation level between regions. The results of the study can be used in the work of public authorities at all levels to develop and adjust programmes for the further labour market development and to prevent unemployment.

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1 Introduction

The rapid development of the digital economy has brought about profound changes in employment. One of these changes is the promotion of a new model of flexible employment. Along with the creating of traditional employment, new flexible employment models are being developed such as self-employment, freelance employment, and part-time employment. Digital technologies and Internet platforms go beyond traditional organisations, provide individuals with market, research, production and other resources, and make it easier for people to become a part of the economy. People can engage in economic activities without being a part of traditional enterprises, and, consequently, the form of employment becomes more flexible. Diversity has become an important way to master jobs.

The introduction and transformation of digital technologies leads to the transition from the traditional industrial economy to the digital economy and has a profound impact on the economic, environmental and social aspects of various countries, including the structure of the labour market, working methods and working mechanisms. The digital economy has led to the development of e-commerce and increased productivity, and has had a significant impact on the global labour market.

The main sources that cover the theoretical foundations of employment and the digital economy are the works of Komarov A.V., Borisov E. S., Kuzbenova E. R. [1], Bobkov V. N., Novikova N. V., Shichkin I. A. [2]. These works thoroughly consider the concept of employment, types of employment and unemployment, the concept of human capital, the concept of digitalisation, forms of implementation and transformation of human capital in the digital economy, the digital revolution and its impact on the stability of labour markets and employment, migration issues. In the works of Borisov E. F., Kulikov L. M., Rofe A. I., Demyanenko A.V. [3], G. I. Abdrakhmanova G. I., Vishnevsky K. O., Gokhberg L. M. [4], the theories of employment, the formation of a new quality of human capital in the digital economy, its structure and the structure of employment are described in detail.

In recent decades, one of the main trends in the development of the economy and society as a whole is the penetration of information technologies into various spheres of human activity [5]. Informatisation is becoming such an important factor in increasing labour productivity and improving the quality of life that researchers consider the changes taking place as the beginning of a new stage of economic development. This stage of economic development in the literature is characterised by the term "information economy" [6,7]. Today, the development of informatisation is primarily associated with the introduction of digital communication technologies, the platform for which is the Internet and mobile devices. The sector of the economy based on such technologies is called the "digital economy" [7].

In the Development Strategy of the Information Society of the Russian Federation for 2017—2030 [6], the digital economy is defined as "an economic activity where the key factor of production is digital data, the processing of large volumes and the use of the analysis results (in comparison with traditional forms of management) can significantly increase the efficiency of various types of production, technologies, equipment, storage, sales, delivery of goods and services." At the moment, the national programme "Digital Economy" [8], which is aimed at creating the necessary for this process legal, technical and economic infrastructure, is the basis for the digitalisation of the Russian economy [9]. One of the main goals of the programme is to increase the Russian Internet audience with broadband Internet access by 2024.

The purpose of the work is to analyse and evaluate the consequences of the digitalisation of the economy in the formation of social and labour relations.

2 The Research Method

The information base of the study is national statistical systems and databases. Analytical, systematic and comparative approaches were used to identify the key problems of the industry and their causes. Along with that a combination of economic and statistical analysis was used for a quantitative assessment of the conclusions drawn.

One of the most important areas from the point of view of the welfare of the population, which is influenced by the development of the digital economy, is social and labour relations and small businesses that do not involve the use of employees (for example, services offered on freelance exchanges). We believe that the consequences of employment digitalisation may be different for the centre, i.e. relative to developed settlements with high incomes, and the periphery with less developed settlements with low incomes. Although, certainly, the main changes in the labour market caused by digitalisation are similar for all regions. The difference in the state of the economy between the centre and the periphery is typical for Russia.

The transformation of social and labour relations under the condition of digitalisation of the economy is associated with its main stages, processes and directions. In a generalised form, digitalisation includes two main processes that correlate with the definition of its content in a narrow and broad sense [6]. In a narrow sense, digitalisation is considered as the process of creating information and digital platforms and operators at various levels of the economy, which is accompanied by the transformation of information and communication technologies into widely used technologies and is characterised by the active use and introduction of digital technologies for storing, processing and transmitting information in all spheres of human activities, and this corresponds to the first and second levels of the digital economy [8]. In a broad sense, the digitalisation of the economy is associated both with a change in the nature of production or economic relations, and with a change in the direct productive forces and factors of production as a result of the implementation of breakthrough technologies.

The transition to the digital economy significantly changes the system of social and labour relations, the labour market itself and the labour process itself. Certainly, each stage of the development and implementation of digitalisation creates both general and specific consequences of the transformation of social and labour relations and the labour sphere which therefore affects the growth of socioeconomic risks and increases threats of digital transformations of industrial and social and labour relations.

In today's digital economy, the problem of employment is not a problem that can be solved by individuals or businesses; there should be more cooperation between the state, businesses and individuals.

In the digital age, machine intelligence has greatly expanded the ability to replace people. Thus, it has put higher demands on talent (especially digital skills) and interpersonal communication, creativity, flexibility, and quick learning. The world skills will also be advantageous. Secondly, the digital age requires talents to be open in finding common positions, while maintaining differences and more actively participating in inter-group, inter-organisational, and even cross-platform collaboration on virtualisation [10]. Thirdly, on the one hand, diversified employment practices offer more individual choices, but also require employees to improve self-management and control while developing their unique values.

Amid new employment trends in the digital economy, it is recommended to develop optimisation measures in the following areas:

Firstly, to reform the existing system of university and vocational education. For example, universities and enterprises are encouraged to collaborate on digital technology training, optimise digital technology courses in general courses, and provide key support in developing the latest technology abilities.

Secondly, in response to the surge in innovation and entrepreneurship in the digital age, government departments should create a more comprehensive support system, especially in terms of funding. For example, the provision of start-up loans at low interest rates, the provision of tax incentives for social entrepreneurship centres and small and microenterprises, as well as the gradual creation of a tax system compatible with the development of the digital economy [11].

Thirdly, due to fraud and unfair employment practices, a digital social management system and a digital credit system should be created on the platform to create a simple, transparent, secure and trustworthy platform.

Fourthly, it is necessary to take into account the appropriate system and innovative services in the social security system and the payment of taxes to ensure greater flexibility in online employment, so that this group of people can enjoy appropriate social benefits while creating the value of the employment relationship [12].

However, given the crisis of 2020, which is spreading unevenly across regions and activities, it is worth noting the enterprises that can be successful in such conditions: food retail with delivery or technology companies that provide remote work. Nevertheless, unfortunately, the number of such enterprises is not big; all types of commercial services (non-food trade, hotels and restaurants, transport, recreation, culture, sports, tourism, etc.) are at obvious risk of temporary stoppage due to the self-isolation of consumers. They account for about a third of all jobs in the country. The unconventional nature of this crisis requires unconventional measures. The main task in the labour market is to enable those who have lost their jobs and incomes to survive this crisis and then quickly return to paid work. Preferably to get the jobs they had before the crisis. The mass destruction of specific human capital created by years of labour and investment must not be allowed. Rapid subsequent recovery is possible only on the basis of pre-existing physical and human capital [13].

This means that the potential of the existing business must be preserved at all costs, so that it can return to normal functioning after the epidemiological restrictions are lifted. If the business disappears/goes bankrupt/liquidates, the subsequent recovery will be much more difficult, and massive long-term unemployment can turn into a sad and long-term reality [14, 15].

Workforce productivity in Russia decreased by 6.10 % in June 2020, compared with an increase of 1.79% in the previous quarter[16]. Data on workforce productivity growth in Russia were updated quarterly from March 1996 to June 2020, and averages 2.80 %. This data reached an all-time high of 11.49 % in December 1999 and an all-time low of -8.51 % in June 2009.

Analysing the impact of information and communication technologies on the labour market and business activity, two main consequences can be identified: *firstly*, in the digital economy, the effectiveness of interaction between an employee and an employer (as well as a customer and a contractor) ceases to depend on their location; *secondly*, the digital economy has been changing the rigid working day schedule adopted under the industrial form of production, making the use of the employee's human capital flexible [17- 19].

The development of the Internet is beginning to change the situation for certain areas of the economy. First of all, we are referring to labour and business activities that have an informational nature. The professional activities of such specialists as programmers, copywriters, designers, administrators of online stores and websites, Internet marketers, call centre employees, etc., do not depend on their physical location since they can work remotely. Gradually, with the development of appropriate digital platforms and communication technologies, physicians, psychologists, teachers, tutors, financial sector workers and lawyers are moving to remote work (so far only partially) [18]. In addition, many professionals from seemingly non-information-intensive professions are beginning to provide information services on the Internet since such social digital platforms as Youtube,

Instagram, Facebook, etc., allow you to share professional information and earn income from your knowledge [19].

Thus, it is possible to observe an increase in the income of workers in the periphery from information activities due to remote work and an increase in employment, since remoteness from the economic centre ceases to limit the demand for information work. At the same time, there is a reduction in the gap between the wages of workers living in the centre and the labour income of workers in the periphery as the latter are more competitive due to the low price of labour supply [20, 21].

It is important to note that management activities are also informational in nature which means that the effectiveness of interaction between administrative staff and subordinates, thanks to new digital technologies, becomes less dependent on the physical distance between them. The consequence of this process is the transfer of a part of the business processes from the centre to the periphery in order to save on labour, rent, etc., which, certainly, has a positive effect on the local labour markets. A striking example of such a business model is the Chinese "Taobao villages" [22]. The Taobao marketplace and developed delivery services provide an opportunity for rural residents to specialise in the production of any desired product and sell it through an online store.

The reduction of limitations in the labour market and the weakening of the monopoly power of certain groups of specialists. Internet technologies reduce the entry and exit limitations in the labour market related to geographical location which increases competition and reduces the monopoly power of scarce specialists. The positive result of this process is an increase in the quality of services offered on the market and employees' motivation to improve labour efficiency and self-development.

Increased specialization by expanding the sales market. Back then, Adam Smith pointed out the importance of the size of the economy for the development of production and the process of division of labour [23]. Many types of work and services become profitable only after reaching a certain volume of the sales market. The digital economy makes it possible to offer services that were previously unprofitable in relatively small localities.

Problems in the system of social and labour relations were identified under the condition of digitalisation. They can (under certain circumstances) cause the manifestation or implementation of a number of economic and socioeconomic risks, among which the most significant and likely are the following[3, 24]:

- risks of job loss;
- risks of loss of basic life support sources;
- loss of the possibility of social protection and social security;
- loss of social status and the possibility of taking it to another level;
- risks of forming a psychological dependence and in extreme cases even the degradation of the individual;
- risks of social rejection and disadaptation of a person in society, etc.

Among the factors and conditions that determine the possibilities of digitalisation of the national economy, there are external (exogenous) and internal (endogenous) [25]. In the structure of external ones, it is possible to distinguish those that provide the possibility of a probable assessment of the implementation of digitalisation processes for certain types of economic activity. First of all, these are the strategic parameters of the development of the national economy and employment, structural changes in the economy, the place of the national labour market in the international division of labour and the level of inclusion of the national economy in the globalisation processes, and other factors.

3 Results

As a result of the study conducted, the following conclusions have been made:

1. The identified causal relationships between the digitalisation of the economy and possible problems and consequences that may manifest themselves in social and labour relations make it necessary to develop a methodology for assessing and quantifying the impact of digitalisation on the labour sphere. Determining the probability of occurrence and implementation of the relevant risks provides a scientific and methodological justification for the development of socioeconomic mechanisms to minimise or prevent them. At the same time, the development of forecasts for the transformation of the labour sphere, subject to the digitalisation of the economy, provides an opportunity to develop promising labour balances for the basic sectors of the economy on the basis of a balance between the supply and demand of labour. On the other hand, such prospective balances should clearly correlate with changes in the education system, which should be focused on the training of personnel of the appropriate professional qualification level. It is in this direction that research will continue in order to form a scientific and methodological support for assessing the likelihood of risks in the system of social and labour relations provided that the economy is digitalised and tested.

2. As the process of information change accelerates, in order to solve the country's employment problem, the government should start with two aspects. At the national level, the country should take the cultivation of high-quality talent as its main strategy, and develop a competent policy regarding these personnel. Accelerate the development of new employment opportunities in the digital economy. Constantly improve the digital skills of employees. Promote the digital transformation of employment and entrepreneurship services, improve policies and legal systems, strengthen risk responses, fill the gap in market talent, start with education, accelerate the reform of traditional education and build a modern learning system.

3. An important social consequence of the digitalisation of employment, which requires state support for this process, is the opportunities that new technologies provide to women who are on parental leave, the disabled and other groups of the population who find it difficult to work on a regular basis. It is also important to understand that the change in the form of interaction between people, which is caused by the digital economy, entails the need for changes in the regulatory framework, in the tax system, etc. Old-style institutions controlling labour relations and business activity in the new economy are losing their effectiveness.

References

- 1 A.V Komarov, E.S. Borisova, E. R. Kuzbenova , *Forecasting the Economic Development of Russia Until 2025 in the Conditions of Digital Economy Formation* Economics and Entrepreneurship, No **3 (92)**, pp. 88–97 (2018)
- 2 V. N. Bobkov, N. V. Novikova, I.A. Shichkin, *Digital Revolution and its Impact on the Stability of Labour Markets and Employment* Standard of Living of the Population of Regions of Russia, No **3 (92)**, pp. 3–4 (2016)
- 3 G.I. Abdrakhmanova, L.M. Gokhberg, A.V. Demyanenko, *Digital Economy* National Research University Higher School of Economics, 96 p. (2018)
- 4 G.I. Abdrakhmanova, K.O. Vishnevskii, L.M. Gokhberg *Economy Indicators in the Russian Federation*, National Research University Higher School of Economics, 248 p. (2019)
- 5 Law of the Russian Federation of 19.04.1991 N 1032-1 (amended of 24.04.2020) on

- Employment of the Population in the Russian Federation
- 6 *Strategy for the Development of the Information Society in the Russian Federation for 2017–2030* [Electronic resource]: decree of the President of the Russian Federation of May 9, N **203**, (2017)
 - 7 T. A Kostyleva *Full version of Regions' Ratings in Terms of Digitation Development Level Digital Russia has been issued*, 2018, URL: <http://d-russia.ru/vyshla-polnaya-versiya-rejtinga-regionov-po-urovnyu-razvitiya-tsifrovizatsii-tsifrovaya-rossiya.html>
 - 8 *The national programme Digital Economy of the Russian Federation*, accessed on November 2, 2020 URL: <http://government.ru/info/35568>
 - 9 *Russian Statistical Yearbook*, 2019, URL: http://www.gks.ru/bgd/regl/b18_13/Main.htm.
 - 10 M. Zorz *How enterprise IT security conversations have changed* Help Net Security. URL: <https://www.helpnetsecurity.com/2017/08/02/security-conversations>
 - 11 R. Botsman, R. Rogers, *What's Mine Is Yours: The Rise of Collaborative Consumption*, 304 p (2010)
 - 12 J. Manyika, S. Lund, M. Chui, J. Bughin, J. Woetzel, P. Batra, and Saurabh Sanghvi (2017). Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages URL: www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages
 - 13 D. Zhang, The Current Situation in China's Digital Economy Development and the Prospects of Sino-Russian Co-operation in Digital Economy, vol. 25, No. 9, pp. 37–46 (2017)
 - 14 D. Sedlov. E. Ganzhur, A. Zlobin, *20 Most Expensive Ru.net Companies. Forbes Rating* Forbes URL: <https://www.forbes.ru/tehnologii-photogallery/372539-20-samyh-dorogih-kompaniy-runeta-2019-reyting-forbes?photo=2>
 - 15 E.M. Abdulhairova *Application of Non-Standard Forms of Employment in the Modern Labour Market* Personnel Management and Intellectual Resources in Russia Scientific and practical journal, No. **2(23)**, p. 68 (2016)
 - 16 *The Growth of Labour Productivity in Russia* URL: www.ceicdata.com/en/indicator/russia/labour-productivity-growth
 - 17 *The Labour Market in Terms of Technological Transformations* No. 4 pp. 57–68 (2017)
 - 18 I.V. Anokhov, *The Division of Labour and the Evolution of the Firm* Vestnik UrFU. Seriya: Ekonomika i upravlenie, vol. 15, No. 1, pp. 135–151 (2016)
 - 19 O.N. Baeva, N.P. Sherstyankina *Evaluation of the Participation of Organisations' Workers in Vocational Education* Labour and Social Relations, No. 3, pp. 16–26 (2018)
 - 20 E. Weber *Industrie 4.0: Wirkungen auf den Arbeitsmarkt und politische Herausforderungen*. M. : Zeitschrift für Wirtschaftspolitik, v. 65, is. 1. p. 66–74 (2016)
 - 21 World Bank *Digital Dividends: World Development Report 2016*. Washington, DC URL: <http://www.worldbank.org/en/publication/wdr2016>
 - 22 B.Zh. Tagarov *Information Causes of Labour Market Discrimination* Ekonomika Truda (Russian Journal of Labour Economics), vol. 6, No. 1, pp. 145–156 (2019)
 - 23 A. Smith *An Inquiry into the Nature and Causes of the Wealth of Nations*, 255 p (1997)
 - 24 M.N. Stefanenko, National economic systems in the context of the formation of the global economic space *Transformation of the labor market in the context of digitalization*, v. 7, pp. 614–617 (2021)
 - 25 B.Zh. Tagarov, Zh.Z. Tagarov *Features of Information Inequality in the Modern Economy* Creative Economy, vol. 12, No. 5, pp (2018) 543–554. DOI: 10.18334/ce.12