

# DIGITAL ECONOMY: OPPORTUNITIES AND RISKS FOR KAZAKHSTANI LABOR MARKET ENTITIES

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**Abstract** - The relevance of the issue of the functioning of the labor market in the context of digitalization is due to the need to recognize and take into account the risks associated with the issue of working conditions. To determine the impact of digitalization on the labor market, a review of modern literary sources was carried out. The authors identified the positive and negative features of this influence. The article considers the concept of risk for questions about working conditions, its main variants and determinants. The authors described that the risk of unemployment due to digitalization directly depends on the degree of labor market flexibility and unemployment flexibility. In conclusion, the authors formulated recommendations on state regulation.

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**Keywords** - Labor Market, Working Conditions, Digitalization, Employees, Employers, Digital Economy.

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## I. INTRODUCTION

The current state of development of the world economy is characterized by digitalization, the penetration of information and computer technologies into an increasing number of spheres of human life. The nature of socio-economic interactions and connections is changing: transactions are being virtualized, tele working opportunities are expanding, public and private services are being provided via the Internet. The emergence of the digital economy is the result not only of natural development and scientific and technological progress, but also of the consistently implemented program of the "digital economy" of our state, managing economic development in the system of state regulation - from the creation of information and communication infrastructure to programs to support the education system for the digital economy [1]. The labor market plays the role of an institution that determines the requirements for the quantitative and qualitative composition of the labor force in an era of intensive digitalization, regulates the supply and demand for workers of appropriate qualifications and sorts out those who do not adapt to the "digital reality" [2].

## II. REVIEW OF LITERATURE

J. Gray, B. Rampa [3], W. Arthur [4] in their works considered the digitalization of the economy as a process of developing and implementing innovative digital technologies in economic activity, accompanied by the creation of specific legal, organizational, socio-economic and other conditions, positively affecting many spheres of public life and being a progressive determinant of economic development.

At the same time, one can agree with V.A. Plotnikov that the phenomenon of digitalization is wider than the

"digital economy", since it covers the vast majority of areas, and not just the economy itself [5].

The labor market is also changing under the influence of digitalization. Researchers identify both positive and negative effects of digitalization on the labor market. The connection and interaction of labor, employment and investment activity from the point of view of explaining economic dynamics is part of the Keynesian direction of economic theory [6, 7].

Keynes J.M. in his works, he pointed out the danger of the spread of technological unemployment as a result of a new industrial revolution - the expansion of machine production - "since the discovery of ways to economically use labor is ahead of the pace of discovery of new ways of using labor" [7].

Currently, the decisive factor in technological changes in production and labor is digital and information and communication technologies, reflecting the fourth wave of the industrial revolution, the essence of which is reflected in the works of K. Schwab [8]. He, like J. M. Keynes, points out that in addition to the possible positive impact of new technologies on economic growth, "... it is important to take into account their possible negative impact on the labor market, at least in the short term.

Technological breakthroughs and automation are replacing human labor by depriving workers of wages or forcing them to use their skills elsewhere" [8, p. 32]. Another researcher of the developing segment of the digital economic system is F. Schmidt, who reveals the content and features of the functioning of the digital labor market, mentions remote work as a source of digital economy growth. More and more employees are choosing it as an alternative to regular full-time work. However, the new "flexibility" is often accompanied by substandard working conditions that

undermine hard-won legal and social guarantees for workers. Considering the "digital" segment of the labor market - the presence and observance of all labor rights, the social protection of workers - F. Schmidt refers to the times of the early industrial revolution, when they did not exist in principle [9].

Most researchers in their publications note the positive consequences of digitalization: acceleration of economic growth; increase in labor productivity and global competitiveness [10]; increasing competition in digital, electronic and online business and expanding business opportunities; improving the welfare and quality of life of the population [11]; reduction of public spending in the social sphere due to the expansion of digitalization and online education [12].

Advances in machine learning, robotics, and artificial intelligence will inevitably lead to automation, changes in labor demand, and redistribution of jobs [13]. However, automation is not limited to the field of manual labor, dangerous production or solving "boring" tasks. The risk group includes intellectual, cognitive or analytical professionals - employees who perform a certain amount of routine work, such as cargo clearance, office or customer service [14].

According to the OECD, 14% of jobs in the European Community are at risk of automation, and 32% expect significant changes from digitization [15]. Summarizing the results of studies by various authors, we can say that digitalization is affecting the economy in general and, in particular, the labor market. Almost every long-term positive effect is accompanied by short-term negative effects that greatly affect human well-being.

### III. MAIN PART

Due to the vastness of the study and the number of publications presented in the literature on the impact of digitalization on the entire economy and the labor market, the task arises of identifying and assessing possible threats, issues of labor relations and determining ways to minimize them through the action of both market and government regulatory mechanisms.

A risk-based approach to assessing the behavior of labor market participants is quite effective in assessing the prospects and consequences of the impact of digitalization.

The hypothesis of this study is that the increase in the scale of digitalization of the economy in the short term is accompanied by an increase in the risk of problems with labor relations on the part of both employees and employers, especially with an increase in the costs of opportunism, the degree of social sensitivity of workers, the degree of income differentiation, etc. etc., and in the long run this leads to an increase in the

efficiency of interaction and stabilization of the labor market at the level of the economy, as well as a reduction in costs in the implementation of labor relations.

The purpose of the study is to identify possible threats in working conditions through the process of digitalization and develop recommendations in the system of state regulation of the labor market in order to minimize them.

The methodological basis of the study was general scientific methods.

The main theoretical approach implemented in the article is the risk-based approach.

The empirical basis of the study was the data presented on the official website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (hereinafter - BNS ASPIR RK).

Many researchers have identified the nature and nature of threats to labor relations in the context of digitalization and have written about threats to the labor market, starting with representatives of the classical school of economic theory. In particular, A. Smith pointed out that there are professions with a special risk, but they do not affect the price of labor. In addition, J.M. Keynes, J. Burnham, T. Veblen, A. Weber, R. Hilferding, J. McCulloch, G. Marcuse and others wrote about the instability of the socio-economic situation of workers in the industrial era.

In the literature, risk is defined as the absence or incomplete information about the outcome of a transaction. In our opinion, risk is the probability of incurring losses in the production activities of the enterprise. In labor relations, the risk of the employee and the employer arises as a result of the actual behavior of the subjects, deviating from the original.

The basis ensures the stability and predictability of one or another type of behavior of relational subjects: the intended behavior is ordered by restrictions - institutions (formal and informal, norms, rules, customs, traditions, etc.) operating in the world of work.

Labor relations develop both in the pre-labor phase (associated with professional self-determination, job search, etc.), and in the labor phase (labor relations, remuneration, work functions, etc.), as well as in the post-labor phase (associated with service pension), but they are always associated with various aspects of professional activity - the quality of professional life.

In this article, we will limit the subject of research to the labor market and the risks for the labor phase of the subjects of the sphere of labor relations - employees and employers.

Depending on the research topic, different authors focus on different types of risk.

The external risks associated with the functioning of the market include:

- Political (Type Of State System, Legislation, Including Labor Legislation, Levers Of State Regulation Of Social Policy, Organization Of Work On A Public Scale, Etc.),
- Economic (Macroeconomic Indicators, Development And Sustainability, Economic Policy, Financial Policy, Production Policy, Etc.),
- Natural And Climatic (Austerity Or Comfort Of Exogenous Working Conditions),
- Social (Social Values And Attitude To Professional Activity, Level And Quality Of Life Of The Population),
- Socio-Demographic (Number Of Labor Resources, Quality Of Labor, Etc.),
- Market (Conditions For The Placement Of Labor, Employment, Features Of Supply And Demand, Segmentation, Norms And Rules Of Interaction, Etc.).

Internal risks are associated with the functioning of internal labor markets and are due to the uncertainty of the conditions and processes of economic (production) activities of an economic entity - emergency situations, lack of supplies, violation of contractual conditions, low efficiency of personnel decisions, insufficient efficiency of material remuneration and personnel management systems, discrepancy (ratio) quality of working life to modern consumer standards in a developed digital society, etc.

Risks in the labor market can be divided into: employer, employee and society; predictable and unpredictable; direct and indirect. Risks depending on the subject of labor relations (conditions and guarantees, wages and incentives for employees, organization and methods of work, etc.). Occupational risk associated with possible damage to health or loss of health in the performance of labor tasks (functions) constitutes a special group of occupational risks.

The risk of the employer in labor relations lies in the selection of personnel and the conclusion of an employment contract, since the employer first of all gets acquainted with the quality of the workforce, the labor potential of the future employee, official documents (diploma of education, biographical data of the candidate).

The risk increases with the digitalization of recruitment as many documents are converted from physical (paper) form to digital. Then, when implementing working conditions, the employer runs the risk of encountering opportunism on the part of employees in the form of low labor efficiency,

non-fulfillment (improper fulfillment) of work tasks, difficulties in monitoring the performance of work, especially in remote employment sectors, etc. The risk increases with the expansion of employee mobility, the weakening of loyalty, dedication of employees to a common cause and the instability of labor collectives (in the case of digital employment, work in the "crowd").

The employer's risk leads to an increase in his employment costs. The value of the marginal product of labor falls below the average productivity of labor. In order to minimize the risks associated with the use of labor, the employer uses the following methods:

1. Reduce The Number Of Units Of Labor, Replace Them With Capital, Introduce New Equipment And Technologies, And Narrow Down The Selection Of Personnel;
2. Transfers The Risk To The Employee Or The Whole Society;
3. Redistributes Risks And Transfers Them From More Probable To Less Probable, For Example, By Rationalizing The System Of Motivation And Stimulation Of Work Of Employees, The Risk Of Opportunistic Behavior Of Employees Is Translated Into The Risk Of Indirect Costs, The Rate Of Which Is Lower.

The employer is always interested in expanding opportunities in the selection of employees, i.e., in the excess of labor in the labor market.

Occupational risk is often associated with non-fulfillment of obligations by the contractor (employer) and violation of formal working conditions.

In case of violation of labor regulations and non-fulfillment of social obligations to the employee, the employer transfers part of the costs to the enterprise or to the employee himself. For example, if the developer saves on social payments when concluding civil law contracts, the contractor will have to direct his income to solve health problems or improve skills. The same applies to informal (unregistered) employment. Violation of labor rights carries the risk of damage to the reputation of the employer through negative reviews on the Internet, lawsuits, fines, etc.

The deformation of labor relations, their transition from the formal to the informal level is increasingly due to the employer saving labor costs and the transfer is associated with risk.

Unemployment can be attributed to the main threat to the worker in the modern labor market. At the same time, under the influence of digitalization and the boom of information and communication technologies (ICT), the risk of the employee increases, in particular the risk of losing part of the income as a result, as well

as the work itself and changing the requirements for employee competencies.

The employer is looking for employees whose quality corresponds to the level of development of digital technologies and whose use gives the highest possible return.

This is typical not only for the external labor market, where employers and employees meet for the first time, but also for the internal market.

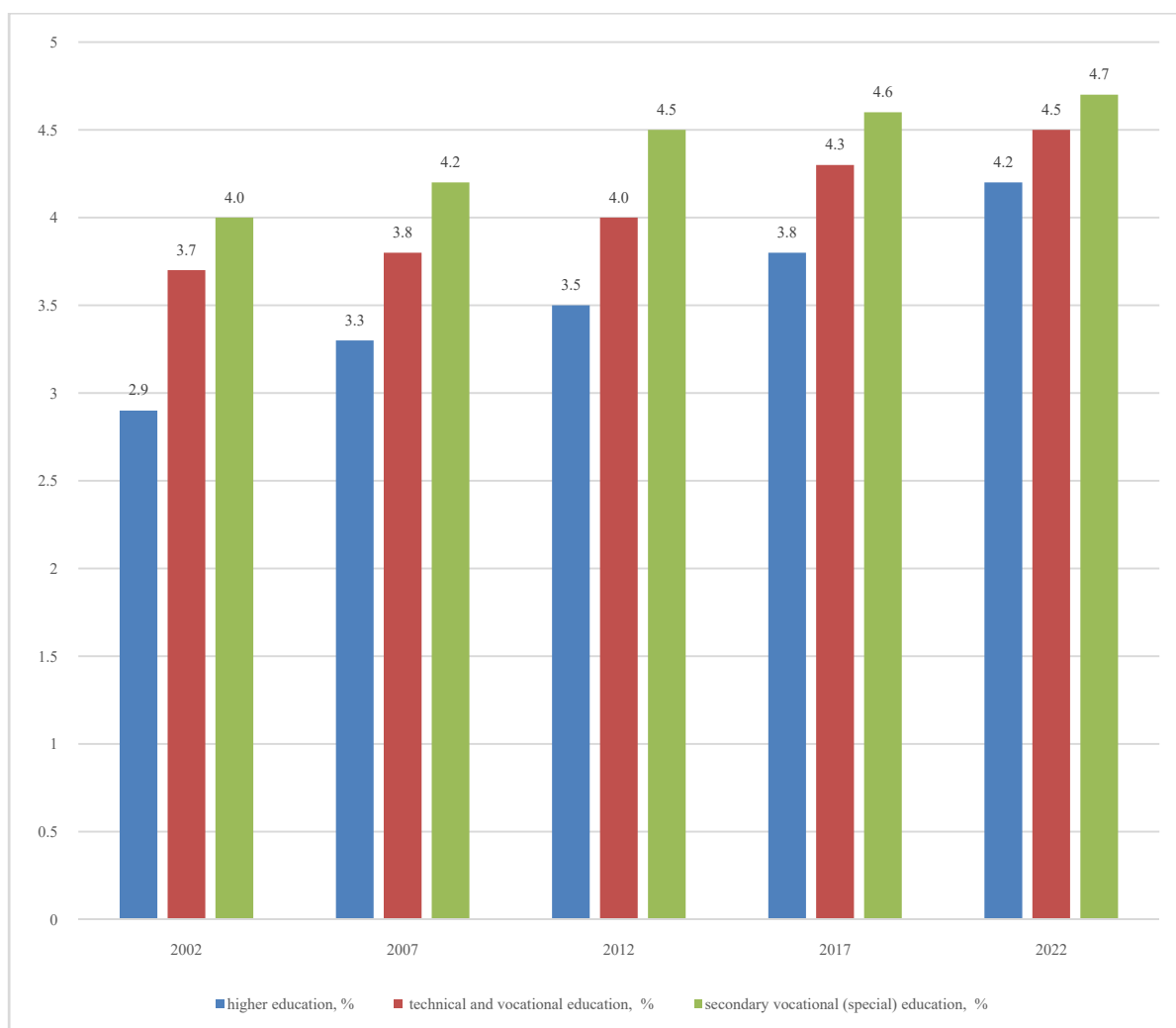
The requirements of employers in the domestic labor market relate not only to professional skills, but also to other components of human capital: a high degree of adaptability - the ability to quickly adapt to changing production conditions, the possibility of retraining, readiness to expand the "functionality" and constantly update knowledge, creative self-development, generation of new ideas, creativity and responsiveness.

The ability to adapt in a team, to share the values and culture of the company, loyalty, communication skills,

social capital are considered to be the competitive advantages of an employee in the era of digitalization. At the same time, the risk of the labor market of the applicant increases the faster, the less specific human capital he has, the less he is inclined to mobility, changing the profile of work, self-education and lifelong learning.

The specificity of human capital determines the competitiveness of its owner in the labor market. With the growth in the share of informal employment and essentially non-work related relationships (for example, client-contractor) in the digital economy, the possibilities for state regulation in this segment are severely limited.

The role of self-regulation of the market, where demand and supply interact, is growing. The stronger the competition among applicants, the greater the risk of losing or losing a job. In the segment of low-skilled people, competition is high, so the risk is high. Figure 1 shows that the lowest unemployment among people with higher education in Kazakhstan.



**Figure 1 - Unemployment rate in Kazakhstan depending on the level of education**  
 Note: compiled by the authors based on the data of the BNS ASPIR RK

Possession of digital, information and computer skills, communication skills and the ability to adapt to the requirements of the employer reduces, but does not completely eliminate the risk of an employee in the labor market. As M. Ford, a businessman working in the field of ICT, notes, the pace of technological change will be so great that workers simply will not have time to retrain into new specializations, thereby constantly replenishing the army of the unemployed [16].

The greatest threat to unemployment are those professions that are subject to algorithmization, and most of them are routine activities that do not require non-standard decisions and management approaches. It is these operations that can be codified and programmed with the help of ICT.

With the expansion of increasingly stringent and diverse requirements for the organizers of production in terms of the quality of the workforce, their individualization occurs, when employment regulated by an employment contract, as well as career growth, become the basis of an employee's life strategy. in the job market.

According to W. Beck, individualization can lead to a break with the traditional way of life, to self-exclusion from social groups and to the equalization of family values, if dependence on market opportunities remains.

The individualization of the labor market is associated with threats, the consequences of which are much more serious than those directly related to working conditions. The risk of the labor market in the context of digitalization arises as a result of distancing in the work process, remote work, fragmentation of simultaneously solved tasks and consists in a possible loss of connection with society - culture, tradition, alienation from society. The willingness of workers to defend themselves against such conditions creates the conditions for labor conflict.

#### IV. CONCLUSION

The digitalization of the economy reveals the determinants of market demand and subordination. Summarizing the theoretical development of the scale of digitalization, we can say that the risk of subjects depends on both direct and indirect factors. Short-term threats to employees due to the obsessive opportunism and control difficulties of an employee when working remotely. The macroeconomic mechanism of free competition has long stimulated demand for the products of those industries where technological progress has led to an increase in labor productivity and, as a result, to a decrease in production costs and the market price of products.

To meet the increased demand from consumers, companies need to increase employment, and due to the high elasticity of demand for products in an industry that has begun modernization, relaxation in this industry will not only occur, but even lead to a jump in work. Innovative companies themselves are increasing the demand for labor, as the accelerating effect of increasing returns on their digital investments stimulates new investments, including job creation, service systems and related service industries, which also reduces the risk of unemployment. In the long term, the very mechanism in the labor market contributes to the redistribution of the risk of unemployment between sectors of the economy. An increase in unemployment leads to a decrease in the price of labor (average wages), which leads to an increase in the demand for labor.

The original new labor-saving technologies have been replaced to some extent by labour-intensive technologies. An increase in the ratio between capital and labor requires an increase in the marginal productivity of labor and an increase in wages. At the same time, the low price of labor reduces consumer demand and, in the long term, investment demand, as well as incentives for the development of new technologies.

Thus, the built-in mechanism of market self-regulation compensates for various risks, including the loss of employees and employers in the implementation of working conditions in the context of digital transformation.

General social costs depend on the flexibility of markets, including the flexibility of employment (unemployment). This is due to the institutional environment that has developed in society, the effectiveness of formal and informal institutions that determine the level of transaction costs.

Social programs and strict state regulation of the labor market do not help make it more flexible, but they balance the risk of problems in labor relations.

An increased risk of structural unemployment is possible in some areas where local labor markets are highly flexible and the labor force is highly mobile and ready for retraining.

To balance short-term risks, it is necessary to use institutional mechanisms of state regulation, in particular: implementation of budgetary financing of retraining programs for workers most at risk of digitalization; implementation of joint programs with market players for the self-employed to adapt to the digitalization of processes related to logistics, advertising and work with online platforms; optimization of the work of labor administration with the help of digital technologies, including the employment of people working in new formats;

to expand the mechanisms of social protection, including workers of atypical forms of work; promotion of corporate social responsibility in the digital sphere, etc.

The theoretical significance of the study stems from the contribution to the development of understanding of production mechanisms and issues of balancing risks associated with working conditions in the context of the digital transformation of the economy and society.

Prospects for further research on occupational hazards in the context of digitalization are associated both with the development of theoretical and methodological approaches to identifying, classifying and assessing different types of risks, and with clarifying empirical relationships with different types of risk manifestations of digital transformation, impact calculations and the degree of determination.

Of interest are both studies of the economic mechanisms of structural (technological) compensation for the unemployed, and state regulation measures aimed at minimizing risks in the labor market.

Further research will eventually focus on the micro (company) level - building a risk management system for digitalization, developing and implementing relocation activities for employees whose skills are not keeping up with modern scientific and technical developments.

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