Labor market in transition to digital economy: the way to cope with the problem of developing the social and labor relations

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Abstract. The world economy is undergoing a digital transformation, and it is happening at a tremendous rate. Today, the trend of digitization of various sectors of society is growing rapidly around the world. This process serves as a basis for the introduction of innovations and the improvement of the internal socio-economic situation. In this regard, many countries have begun to encourage and regulate the development of digital technologies in order to keep the positive effects and prevent negative consequences of transformation.

With the emergence of the digital economy human and social capital are considered as key sources of welfare, that requires a conceptual shift in society, while the system of labor relations within such disruptive changes requires to be as responsive to changes as possible, from the positions of investments in human capital, adaptation to new conditions, and appropriate measures from the government. This paper outlines an approach proposed by the authors to represent the relations within the economic system of the labor market, wherein the model of labor relations can be defined as a set of relations between its subjects, with possibility to configure processes in appropriate/required way. By assigning the components and levels for the system, along with defining specifications and/or attributes for model element, it is possible to explore complex relationships (processes, actions, etc.) within the system and evaluate the overall performance.

1 Introduction

The digital economy due to its policy-based and technology-related nature can drastically improve efficiency, income, and social well-being. This creates employment opportunities in new markets and increases employment in some occupations. As digital technologies enable the production of more goods and services with fewer labor efforts, there is a risk of unemployment or lower wages for workers [1]. These also enable changes in the organization of existing policies and programs to integrate into the labor market and improve the quality and skills of work. To embrace the benefits of digitalization, different stakeholders (government, businesses, academia) need to address the challenges of new...
economic and labor markets. Therefore, all efforts should be focused on policies to encourage digital growth and employment in new economic activities, help workers transition to new jobs, and ensure the quality of jobs in the digital economy.

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Employment in the digital economy acquire a new meaning and become a challenging issue. The realities of the digital economy, associated with the widespread use and implementation of Artificial Intelligence, the Internet of Things, Big Data and Data analytics as well as many other advanced technologies and solutions in literally all spheres of the socio-political life of the society, lead to the need to constantly change and adapt, no matter in which area or domain of human activity such changes occurred. The digital economy is changing the structure of employment, communication styles, ways of consuming services, and business practices. This paper outlines the problem in the field of setting the social and labor relations in regard to representation and description: the system of labor relations is described in analogy with information system (since it is to support the activity within the digital environment), and adaptation scenario is proposed for better cope with the transition to the digital economy. Appropriate statements are given for formal way to study and analyze the labor market, i.e. system-based view, so further implementation for different use-cases are possible to achieve improved performance of the considered system.

2 Motivation for research

pillars of the digital economy is ‘hyper-connectivity’, which means that people, organizations, and machines are interconnected as a result of the Internet, mobile technology, and the Internet of Things (IoT) (https://www2.deloitte.com/). Digital transformation makes the world we know constantly changing and the ‘prerequisites’ of digital economy thus will change as well, i.e. how enterprises are structured, interaction of organizations, traditional notions of how consumers use services, information, and goods. In other words, digital transformation means adopting digital technology appropriately to change services or procedures. This is achieved by replacing manual (non-digital) processes with digital processes or by replacing outdated digital technology with updated digital technology. The world economy is undergoing a digital transformation, and it is happening at a tremendous rate. With the emergence of the digital economy human and social capital are considered as key sources of welfare, that requires a conceptual shift in society, while the system of labor relations within such disruptive changes requires to be as responsive to changes as possible, from the positions of investments in human capital, adaptation to new conditions, and appropriate measures from the government.

The digital economy is changing the knowledge, skills, and abilities necessary for people to succeed and increase their personal well-being in terms of developing technologies. In recent years, digitalization and the pandemic have accelerated changes in the global labor market. A recent report by the World Economic Forum indicates that people around the world are starting to lose their jobs not only due to the pace of new technologies but also due to the economic crisis. According to the report, by 2025, some redundant professions will decline (from being about 15% to 9%), while new professions will grow from 7.8% to 13.5%, and 85 mln. jobs may be displaced by the labor division.
shift between humans and machines, 97 mln. new roles will be created. These new jobs will appear much slower than previously expected, and old jobs will start to disappear much faster than expected.

The report of the Global Commission on the Future of Labor, prepared for the 2019 anniversary session of the International Labor Organization, states: “Technological advances such as artificial intelligence, automation and robotics will create new jobs, but those who lose their jobs during such a transition can rotate. The skills required today do not apply to tomorrow’s jobs, and newly acquired skills can quickly become obsolete (https://www.ilo.org).

Digitization in the modern economy has a significant impact on the labor market and employment. It changes existing workplaces, that require employees to acquire new skills to perform new tasks, and therefore requires continuous professional development, the acquisition of new knowledge throughout life, the ability to use new software, new automated and robotic technological processes. With such changes, employers must quickly retrain employees or replace them with professionals with the appropriate knowledge and skills [7]. At the same time, the digital economy poses special challenges to labor law, which are reflected in individual and collective labor relations, many of which require legislation to be regulated. That indeed requires a thorough understanding of the processes behind initializing and implementing such relationships and studying the mechanisms to more effectively regulate and apply policies to the labor market.

The labor market is also directly affected by the digitization of labor relations itself (both individual and collective), which requires them to adapt in terms of real theoretical structure and important features, as well as legal regulation that meets modern requirements. In particular, it is crucial to consider and analyze the following relationships:

• The impact of digitalization on employment;
• The impact of digitalization on labor relations;
• Changes in collective labor relations under the influence of digitalization;

Social and labor relations as the interrelations and relationships existing between individuals and their groups in the processes caused by labor activity, need to be considered towards the conditions of the digital economy, with social and labor relations arising and developing in order to regulate the quality of working life.

3 Methodology

The model of labor relations can be defined as a set of relations that develop between the subjects of labor activity under the influence of macroeconomic factors; such a model is characterized by a system of interrelated economic, legal, political, social, moral relations [3]. These relations, in separate (individual) and complex, systematic considerations need gradually become transformed and have appropriate adaptation degree on the transition to the digital economy. Adaptation support while structuring the system in new conditions requires several dimensions to evaluate: for substantive consideration, we may refer to the enterprise level depending on the scope of the activity. In analogy with modeling the reference architecture of the information system [8], we propose to explore the adaptation scenarios for social and labor relationships using the formal representation of its components. Hence, the configuration can be adapted accordingly to conditions with the requirements of different stakeholders (e.g. employees), and the configuration process can be performed repeatedly in order to support the adaptation process for each group of components, in each stage.

The labor market, like other markets, can be described in terms of supply or demand [9]. In terms of demand, we find all types of employers who need or may need workers and
consider the most 'influential', as given in Fig.

Fig. 1. Influential components of social and labor relations.

4 Discussions
This research work is based on a systematic approach to the economy and the study of the labor market in terms of systematic analysis of its components, i.e. taking into account all the interrelationships in the labor market, the study of individual components of economic relations, the role of each in the overall system, detection and, conversely, by determining the impact of the system as a whole. In this case, the principles of micro and macroeconomics are also applied.

In particular, demographic forecasts through the application of complex labor balances based on the production-cyclical approach to the management of labor relations, the structure of the market economy, which serves to maintain and balance the labor market and labor resources, the interdependence of the growth of these labor resources with the developing economy with a balance of prospective forecasts for the development of socio-economic sectors are possible to explore on the appropriate way. The purpose of configurable process models is to provide generic models that combine the possible variations of a process into a single model. Subsequently, such a model can be tuned to a specific solution, i.e. the customized model should guide the user to a solution that matches the user's requirements were through configuration capabilities, the configurable model must be able to provide a complete, integrated set of all possible process configurations.

The approach proposed herewith bears kinds of benefits. We can name technological significancesince it covers the issues related with digitization of the economy based on the use of the legal framework, taking into account modern international and local development; besides the legislative framework is aimed at expanding employment opportunities and increasing labor productivity by applying a competency-based approach to assessing the level of professional skills reflected in professional standards: it relates as well to professional standards affecting the emerging demand in the labor market, the supply of labor produced by educational institutions and the regulation of human resources within the firm; demand and supply of labor is another pros, i.e. intra-firm regulation of human resources is formed in the conditions of flexible forms of employment and flexible organization of labor activity; the flexibility of the forms of employment organization and labor activity predicts the results achieved, the specifics of the assessment of labor productivity and wages used; the specifics of the evaluation of the results may be achieved, since the forms of labor productivity and wages require the strengthening of social dialogue and the promotion of international labor standards.

From the socio-economic significance the global labor market is currently experiencing global changes, with some occupations already extinct or threatened with extinction as they are being replaced by robots or computer programs. Instead of traditional occupations and positions in the labor market, completely new mobile and flexible labor functions will emerge, which imply the universality of knowledge and skills of specialists and workers, which can easily change depending on the profile of enterprises, types of activities, the economic situation in the market. The essence of this research is to identify such cases of adaptation. Along with stated above, the approach will cover indirectly the general principles of regulation of social and labor relations that are formed at the international level and reflected in the documents of the International Labor Organization, which strengthen the basic human rights and principles in the field of employment, social protection, social dialogue, worker rights for the country with transition economy, like Uzbekistan.

5 Conclusion

Analysis of current global economic and technological trends affecting the formation of new socio-economic relations and changes in the labor market in the context of the digital economy is the methodology of scientific work: Digital economy is characterized by three E3S Web of Conferences 402, 08019 (2023) TransSiberia 2023
levels of impact on social and labor relations: and sectors of the economy; - platforms and technologies that form competencies for the development of markets and sectors of the economy; - an environment conducive to the development of platforms and technologies and the effective interaction between market participants and sectors of the economy. The relationship of social and labor relations to the levels of the digital economy can be direct or indirect.

Scientific research involves the application of methods of predictive research of the labor market. Accordingly, an approach that takes into account the main factors (factor method) that affect labor supply and demand (e.g., a factor of the demographic situation in the country) is appropriate. Another factor is the increase in migration flows in the region. An analysis of the opportunities for replacement and retraining of workers of different occupations, as well as possible changes in the workforce, can be predicted in this study. Similar estimates can be obtained by analyzing the process of concentration of labor resources by type of production facilities and their activities. The availability of information on the course of these processes and the government's subsequent economic policies and directions allow the use of a synthesis of heuristic (question and answer) and quantitative procedures to objectively determine the possible level of the labor sector (indicators include unemployment, employment, etc.). Such an approach is an acceptable method for the transition to the same digital economy, allowing the labor market to improve as expected.

Acknowledgments

This work is partially supported by the project funded by the Ministry of Innovative Development of the Republic of Uzbekistan ‘IL 402104443 Adaptive transformation of the labor market and models of organization of social and labor relations in the digital economy of Uzbekistan’.

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