

THE IMPACT OF DIGITALIZATION ON LABOR RELATIONS IN UKRAINE

Oleg M. Yaroshenko *
Olena Ye. Lutsenko **
Nataliia O. Melnychuk ***
Leonid V. Mohilevskiy ****
Natalya M. Vapnyarchuk *****

ABSTRACT

Increasing the power of computer technology, combined with the rapid spread of the Internet, large databases, etc., significantly changes the nature of work. Innovation in the labor process boosts productivity and decreases costs. By increasing overall productivity, innovations in ICT allow enterprises, institutions, and organizations to produce a certain number of goods and services resorting to fewer employees, which leads to the technological lack of jobs. To carry out a rigorous analysis of this issue, obtain trustworthy results, and draw relevant conclusions, the authors applied general and special research methods. It has been found that the processes of digitalization affect the labor market, in particular, the emergence of new and the disappearance of «old» professions. In Ukraine, digitalization processes significantly affect the course of labor relations and the organization of labor at enterprises, institutions, and organizations. The authors note that it is still a matter of concern to ensure the security of such information and to determine the range of persons who

* Oleg M. Yaroshenko, Yaroslav Mudryi National Law University, Kharkiv, Ukraine; oleg-yaroshenko@edu-knu.com
** Olena Ye. Lutsenko, Yaroslav Mudryi National Law University, Kharkiv, Ukraine; o.lutsenko8267-2@edu-knu.com
*** Nataliia O. Melnychuk, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; melnychuk8267-7@edu.cn.ua.
**** Leonid V. Mohilevskiy, Kharkiv National University of Internal Affairs, Kharkiv, Ukraine; leonid.mohilevskiy@edu-knu.com.
***** Natalya M. Vapnyarchuk, National Academy of Legal Sciences of Ukraine, Kharkiv, Ukraine; vapnyarchuk8033@sci-univ.com

will have access to such information, such as who will be the owners and managers of such information. The authors of this article argue that innovations in labor legislation make sense in today's information society.

KEYWORDS: *digitalization, innovation, flexibilization, electronic workbooks, qualified electronic signature.*

1. INTRODUCTION

The creation of a new transnational infrastructure – the Internet, has led to fundamentally important changes that have affected not only technology and the economy but also the social structure of society, its value system, employment, and the labor market. For example, the introduction of the World Wide Web has significantly expanded access to information on labor market opportunities associated with the formation of a database of vacancies, to create multinational companies that use work anywhere in the world. The transformation of the technological world in turn forms the socio-economic preconditions for the creation of modern types of employment. These prerequisites are expressed in the intellectualization of labor, effective forms of manufacturing, and new forms of relationships in the labor process of the subjects of labor relations. The rapid spread of innovative forms of labor organization is caused by three main prerequisites: technological, social, and economic.¹

The openness of the economy is a catalyst for the global expansion of modern Information and Communication Technology (ICT). The expansion of transnational corporations and international national enterprises is due to the factors that determine the globalization of the economy and contribute to the openness of labor markets, namely: the international division of labor, interstate differences in labor costs, greater opportunities for rapid «acquisition» of the highly skilled labor force by reducing the cost of transmitting–receiving information. Information and Communication Technologies (ICTs) do not make an exception to this historical pattern. Information technologies substitute people that accomplish routine tasks with computer–directed production processes (automation).

Many scholars have studied the influence of digitalization on the progress and transformation of labor and related relationships. Thus, in their works, Yaros-

¹ Yaroshenko, O.; Melnychuk, N.; Moroz, S.; Havrylova, O.; Yaryhina, Y.: Features of remote work in Ukraine and the European Union: comparative legal aspect, *Hasanuddin Law Review*, 7(3) 2021b, pp. 136-149. <http://dx.doi.org/10.20956/halrev.v7i3.3218>

henko O. M.,² Lutsenko O.,³ Vapnyarchuk N. M.,⁴ Burnyagina Y. M.,⁵ Kozachok-Trush N. V.,⁶ Mohilevskiyi L. V.,⁷ Tomashevski K.⁸, and others considered certain aspects of the impact of changes in the mechanism of organization and implementation of social relations, including labor and related. They are convinced that the processes of digitalization affect the labor market, in particular, the emergence of new and the disappearance of «old» professions. And at least 3-5 jobs are created for the whole economy; two of them are for highly qualified workers (for example, doctors, lawyers, etc.) and three are for low-skilled workers (for example, waiters, hairdressers, salesmen, etc.). The processes of digitalization significantly affect the course of labor relations and control over the employee's performance of his labor function.

The openness of the economy is a catalyst for the global expansion of modern ICT. The expansion of transnational corporations and international national enterprises is due to the factors that determine the globalization of the economy and contribute to the openness of labor markets, namely: the international division of labor, interstate differences in labor costs, greater opportunities for rapid “acquisition” of the highly skilled labor force by reducing the cost of transmitting/receiving information.⁹

² Yaroshenko, O.M.; Lutsenko, O.Ye.; Vapnyarchuk, N.M.: Salary optimisation in Ukraine in the context of the economy Europeanisation, *Journal of the National Academy of Legal Sciences of Ukraine*, 28(3) 2021a, pp. 224-237.

³ Lutsenko, O.: Anticorruption compliance: International experience in legal regulation and innovation for Ukraine, *Humanities and Social Sciences Reviews*, 7(5) 2019, pp. 765-770.

⁴ Yaroshenko, O.M.; Lutsenko, O.Ye.; Vapnyarchuk, N.M.: Salary optimisation in Ukraine in the context of the economy Europeanisation, *Journal of the National Academy of Legal Sciences of Ukraine*, 28(3) 2021a, pp. 224-237.

⁵ Yaroshenko, O.M.; Vapnyarchuk, N.M.; Burnyagina, Y.M.; Kozachok-Trush, N.V.; Mohilevskiyi, L.V.: Professional development of employees as the way to innovative country integration, *Journal of Advanced Research in Law and Economics*, 11(2) 2020, pp. 683-695.

⁶ Yaroshenko, O.M.; Vapnyarchuk, N.M.; Burnyagina, Y.M.; Kozachok-Trush, N.V.; Mohilevskiyi, L.V.: Professional development of employees as the way to innovative country integration, *Journal of Advanced Research in Law and Economics*, 11(2) 2020, pp. 683-695.

⁷ Yaroshenko, O.M.; Vapnyarchuk, N.M.; Burnyagina, Y.M.; Kozachok-Trush, N.V.; Mohilevskiyi, L.V.: Professional development of employees as the way to innovative country integration, *Journal of Advanced Research in Law and Economics*, 11(2) 2020, pp. 683-695.

⁸ Tomashevski, K.; Yaroshenko, O.: Problems of labour legislation codification in Belarus and Ukraine: History, current situation and prospects, *Transition Studies Review*, 27(2) 2020, pp. 41-49.

⁹ Yaroshenko, O.M.; Prokopiev, R.Ye.; Inshyn, M.I.; Maliuha, L.Ju.; Hnidenko, V.I.: Combating the illegal employment of third-country nationals in the member states of the European Union. *Krytyka Prawa. Niezależne Studia Nad Prawem*, 14(2) 2022a, pp. 202-218. <https://doi.org/10.7206/kp.2080-1084.531>

Currently, there is a rapid change in the structure of the world labor market, which is linked to the invention of an innovative area of business – information business, such as the production of information products and services. The sphere of information services (information business) occupies a leading place in the structure of the economy of industrialized countries. Production at the enterprises of the information complex has a range of characteristic features. Thus, the objects of labor in this area are the primary information, the means of labor – the ways of its transformation, storage, transmission, and the purpose of production is customer satisfaction. In the modern world, the share of the information sector in the gross national product has increased significantly, and the share of employees engaged in the processing and transmission of information in the total number of employees has increased.¹⁰

2. METHODOLOGICAL FRAMEWORK

This research was stipulated by the processes of digitization of all spheres of public life, which did not go unnoticed by the labor law sphere. Increasingly, the labor market is undergoing processes of «pushing» workers, which is associated with the proliferation of robots and digital technologies that simplify labor processes, changing the processes of manufacturing or manufacturing products, to reduce the stages of such processes. Accordingly, this article is aimed to analyze global trends in the labor market with the spread of digitalization and develop applied approaches to improving the mechanism of labor relations in the context of digitalization. To perform this task, a range of academic works of Ukrainian and foreign scholars, regulations, and experiences of economically developed countries were studied.

General and special research methods were used to analyze the issues under study, obtain trustworthy results, and draw up relevant conclusions. The research is grounded on the dialectical method, which was used to study digitalization within labor relations. The functional method was applied to explain the intra-system, inter-system, and external-system connections of the mechanism of realization of relations in the sphere of labor under the influence of digitalization processes. The formal-logical method was used to critically analyze the legislation and the legal regulation of the mechanism of implementation of labor relations under the influence of digitalization, which helped develop proposals to improve labor legislation. The comparative method was applied to analyze other countries' experience in the legal regulation of labor relations under the influence of digitalization processes.

¹⁰ Kvetnoy, L.M.: Development of remote forms of employment in the modern world economy. Moscow, 2011.

Moreover, the authors resorted to comparative law and hermeneutics to comprehend the essence of labor relations under the influence of digitalization processes and foreign experience in these matters. When developing scientific and applied approaches to improving the mechanism of labor relations under the influence of digitalization, the laws of dialectics, and applied formal-logical and functional methods of scientific research were applied. With the help of these methods, the authors managed to distinguish efficient approaches to improve the mechanism of implementation of labor relations under the influence of digitalization. In addition, the authors concluded that the procedure for keeping records of the length of service and its confirmation using digitization processes needs to be further improved.

Moreover, theoretical methods of scientific research were also used in the work, such as induction, deduction, analysis, and synthesis. Induction – the movement of thought from partial to general. Deduction – the movement of thought from general to specific. The method of analysis is manifested in the imaginary selection of structural parts, and elements of a particular phenomenon or process. The analysis was used in the work from the time of comprehension of legislative requirements of national, international acts, and foreign legislation. The method of synthesis was useful for drawing conclusions during the study.

3. RESULTS AND DISCUSSION

3.1. THE INFLUENCE OF DIGITIZATION ON LABOR RELATIONS IN THE WORLD

Communication technologies facilitate the managing of complex production activities across space and the transfer of labor-intensive production industries to low-income countries (offshoring). Meanwhile, ICTs generate new working places in the ICT area. The general impact of these various factors is thought to be positive in the long run under the conditions proposed by economic theory. Since economies may differ from these conditions, the employment effect of ICTs may reckon on institutions and policies.¹¹

By boosting total performance, ICT innovations facilitate companies producing a certain amount of goods and services resorting to fewer employees, thus allowing technological unemployment. This impact is stronger if the labor-saving bias of the new technology is larger, i.e. the ICTs decrease the demand

¹¹ Pupillo, L.; Noam, E.; Waverman, L.: Digitized labor: The impact of the internet on employment, New York, 2018.

for labor force at constant input prices. The labor-saving bias can differ in the labor type, e.g. ICTs are prone to be prejudiced against low-skill and high-skill workers. However, ICT process innovations cause a decrease in production costs. In the context of the competitive market, it means lower prices, leading to increased demand for products and services. In turn, increased demand results in extra production and jobs (compensation «via a decrease in prices»). The intensity of this impact is attributed to the following factors: the competition level in the product markets and the price elasticity of final demand.

In product markets with lower levels of competition, the decline in costs provoked by ICTs is not completely converted into lower prices and produces excess profits for innovative companies. A certain part of these excess profits is immediately reinvested and boosts the production level and the number of jobs in the industrial sector (compensation «via the increase in machinery»). Another part permits to have supplementary income for shareholders (as benefits) and employees (as salary negotiations), who may either spend it on higher consumption or put it aside. Higher consumption enhances the total demand whereas savings are realized through investments by companies and consumption by households within the financial system. These two channels provide the growth in the income generated by ICTs, which boosts the total demand, production, and jobs (compensation «via the increase in income»). This impact can be more significant depending on the companies' readiness to invest, the households' readiness to consume, and the effectiveness of the financial system in reassigning savings.

Furthermore, the direct impact of ICT innovations on employment can be refunded by a reduction of real salaries, which provokes the growth in the labor intensity of production and/or a reduction of production costs (compensation «via a decrease in wages»). This first effect is determined by the level of interchangeability of labor and the other production inputs and the level of wage flexibility in the labor market. The second effect involves the compensation «via a decrease in prices», which was explained before. Finally, the commercialization of innovative ICT goods and services boosts consumption and production, as well as increases the demand for labor (compensation «via new products»). This general explanation of the compensation theory presupposes three main ideas. Firstly, the effect of ICTs on employment is the result of a complex collaboration of several channels, agents, and industries. By analyzing several of these components, it is possible to assess the influence of ICTs on employment.¹²

¹² Pupillo, L.; Noam, E.; Waverman, L.: *Digitized labor: The impact of the internet on employment*, New York, 2018.

Rinaldo and Vezzani determined that all innovation types, such as organizational innovation, influence employment indirectly by increasing productivity, which provides higher sales and more working places.¹³ At the same time, it is not possible to differentiate these influences using the traditional distinction between product and process innovation. Innovation strategies, which involve a complex of product, process, and organizational innovations, demonstrate the biggest positive effect on employment, while their negative effects can be observed in manufacturing companies when innovations occur along with changes in the organization.

Katz analyses the employment multiplier calculated within different studies.¹⁴ For example, this value fluctuates between 1.92 in Germany and 3.6 in the United States. Mandel and Scherer calculated that each new working place in the mobile application industry creates another 0.5 jobs in other branches of the economy.¹⁵ When studying the impact of Facebook app development on employment in the United States. Hann, Viswanathan, and Koh use multipliers of 2.4 for the broadband industry, 2.5 for the communication sector, and 3.4 for the whole economy.¹⁶ Moretti puts forward that the high-tech job multiplier reaches the value of 5.¹⁷ Thus, in the United States, each new job in the software, technology, and life-sciences industries indirectly generate five new jobs are generated in other branches of the local economy, two - in high-skill occupations (e.g. doctors, lawyers) and three - in low-skill occupations (e.g. waiters, barbers, store clerks).

In the world, the processes of digitalization are rapidly affecting the course of labor relations and control over the employee's productivity. For example, in New Zealand «ECONZ Wireless» uses info-communications to organize and monitor employees. Yes, this service provides automatic notification to the manager not only that the employee is busy, but also what exactly. To do

¹³ Rinaldo, E.; Vezzani, A.: The impact of technological and organizational innovations on employment in European firms, *Industrial and Corporate Change*, 21(4) 2012, pp. 871–899. <https://doi.org/10.1093/icc/dtr069>

¹⁴ Katz, R.: The impact of broadband on the economy: research to date and policy issues, Geneva, 2012, [https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf]

¹⁵ Mandel, M.; Scherer, J.: The geography of the app economy, in: *South Mountain Economics*, 2012, [https://southmountaineconomics.files.wordpress.com/2012/11/the_geography_of_the_app_economy-f.pdf]

¹⁶ Kornieiev, K.; Horobets, O.: Quarantine digitalization: what has changed and what challenges have arisen, 2020, [https://jurliga.ligazakon.net/news/194722_karantina-ddzhitalzatsya-shcho-zmnilosya-ta-yak-vikliki-postali]

¹⁷ Moretti, E.: *The new geography of jobs*, Boston, 2012.

this, the manager only needs to select the necessary commands in the phone menu, which will signal: the working day has begun, a break, completion of the planned task, started a new task, completed all tasks, and so on. Each message is instantly logged on a password-protected Web page, which allows management to remotely track employee employment and keep records. This service is already very popular in small companies that specialize in sales or repair work, consulting services, and other activities that require high mobility of staff.¹⁸

But the company «Telecom» (Italy) gave the staff of seven of its help desks to work from home, providing them with personal computers, modems, fax machines, and telephones. In Barbados, staff process insurance claims received from the Canadian insurance company «Manulife». In Ireland, the staff of the hotel reservation agency, located in the city of Cork, receives calls in seven European languages from 16 countries. Some Singaporean newspapers are partially edited and typed in Sydney (Australia) and Manila (Philippines), and then there is an electronic exchange of information and results.¹⁹

Innovation in the labor process boosts productive capacity and decreases production costs. By increasing overall productivity, innovations in ICT allow enterprises, institutions, and organizations to generate a certain number of products and services using fewer working places, which leads to the possibility of technological unemployment. As it becomes more powerful, this effect causes a biased way of saving labor, ie the more developed ICT is, the less the demand for labor decreases. Prejudices about labor savings may vary determined by the type of work. For example, ICT representatives are generally prejudiced against low-skilled and high-skilled workers. However, innovations in ICT cause a decline in production costs. In a competitive market, this decline stimulates higher demand for products. On the contrary, higher demand stipulates extra production and jobs, that is «compensation through lower prices». The intensity of this effect is stipulated by the following factors: the level of competition in the commodity markets and the price elasticity of final demand.

In less competitive markets, the reduction of production costs caused by the development of ICT creates additional profits for innovative enterprises, institutions, and organizations. A certain part of these excess profits is reinvested and leads to an increase in production and employment in the industrial sector, i.e. «compensation through increased engineering» occurs. The other

¹⁸ Ludanik, M.V.: Remote employment in the Russian labor market: formation, development and mechanisms of regulation. Moscow, 2006.

¹⁹ Kvetnoy, L.M.: Development of remote forms of employment in the modern world economy. Moscow, 2011.

part provides additional income to shareholders (in the form of dividends) and employees (by raising wages), who may either spend it on higher consumption or put it aside. Higher consumption enhances the total demand, whereas savings are realized through investments by companies and consumption by households within the financial system. These two channels provide growth in the income generated by ICTs, which boosts the total demand, production, and jobs (compensation by increasing income). The effectiveness of these processes allows to boost investments and provokes the financial system.

The direct impact of ICT innovations on jobs can be offset by a reduction in real salaries, causing the growth in work intensity and/or a reduction in production costs, which means «compensation by reducing wages». The effectiveness of the first factor is determined by the level of interchangeability of «old» professions for «new» and other production resources and secondly, by the degree of flexibility of wages. The second factor leads to “compensation due to lower prices”. The commercialization of new ICT products and services raises the consumption and production levels, as well as increases the demand for labor; there is «compensation for new products». This factor will be effective if there is less substitutability of existing goods for new and higher complexity of production of new products. The complexity of ICT goods and services will decline faster than in other branches of the economy since ICT companies consume the ICT processes most intensively.

Thus, the creation of a positive impact of ICT on the organization of labor depends on several conditions, such as additional income generated by ICT innovation, which cannot be completely spent or invested, or lower unit costs. Compensation for declining labor demand that ICT can cause is due to the mobility of the resources, such as capital, knowledge, and labor, between enterprises and branches of the economy. In essence, this change requires time and can be impeded by institutional obstacles and labor market shortcomings. The development and rapid spread of ICT worldwide contribute to the formation and deepening of entrepreneurial skills, the increase of intangible and tangible assets, and the expansion of the range of skills of employees, which are usually specific to a particular sector of the economy. All this encourages the creation of new professions and the renewal of the labor market.²⁰

²⁰ Yaroshenko, O.M.; Sirokha, D.I.; Velychko, L.Y.; Kotova, L.V.; Sobchenko, V.V.: Current problems of legal regulation of remote work in the context of the introduction of restrictive measures caused by the spread of Covid-19 in Ukraine and the EU. *Relacoes Internacionais no Mundo Atual*, 1(34) 2022b, pp. 1-16. <http://dx.doi.org/10.21902/Revrima.v1i34.5575>

3.2. THE IMPACT OF DIGITALIZATION ON LABOR LAW IN UKRAINE

In Ukraine, only standard forms of labor organization were common for a long time – individual and collective directly at enterprises, institutions, and organizations. At present, in the conditions of digitalization of all aspects of Ukrainian society, along with the above forms of distribution, innovative forms of labor organization are gaining ground, in particular, teleworking, home working, as well as working with flexible hours.

In addition, the organization of the labor process in the context of digitalization is also undergoing significant changes, in particular, the introduction of electronic workbooks and qualified electronic signatures, significantly changed the procedural aspects of employment, review of personnel documents, and termination of employment. Previously, the Labor Code of Ukraine did not contain regulations that would regulate the above forms of labor organization.²¹ Only the Law of Ukraine «On amendments to certain legislative acts of Ukraine on improving the legal regulation of telework, home working and work with flexible hours» of February 4, 2021, № 1213-IX (effective from 27.02.2021) changed the situation in the Labor Code of Ukraine and included norms on teleworking, home working, and work flexible working hours.²² Such positive developments have contributed to the improvement of the practice of introducing remote, home-based work or flexible working hours.

Creating flexible forms of employment and virtual work teams of performers who are not tied to a particular office allows using mobile communications to maintain the necessary contact with each other and with customers. This, in turn, leads to the creation of new labor relations in cyberspace, based on the formation of certain social and labor remote relations between labor market participants, endowed with a high degree of flexibility, and on the other – is a high degree of risk of these relations, which require a certain level of self-organization from remotely employed workers.²³

«Ukraine is the first country in the world to have digital passports and the fourth one in Europe to have a digital driver's license. Digitization is the direct and best way to tackle corruption. Digitalization is a battle against corruption, a decrease in communication between citizens and authorities, simplification

²¹ Verkhovna Rada of Ukraine.: Labor Code of Ukraine, 1971, [<https://zakon.rada.gov.ua/laws/show/322-08#Text>]

²² Verkhovna Rada of Ukraine.: Law of Ukraine № 1213-IX “On amendments to certain legislative acts of Ukraine on improving the legal regulation of telework, home working and work with flexible hours”, 2021a, [<https://zakon.rada.gov.ua/laws/show/1213-20#Text>]

²³ Ludanik, M.V.: Remote employment in the Russian labor market: formation, development and mechanisms of regulation. Moscow, 2006.

of procedures, and for its future», – the President of Ukraine emphasized.²⁴ Quarantine has given impetus to the digitalization of both business and government procedures. However, one can only hope that the state will be able to react quickly to challenges that will emerge in the context of innovations, minimizing breaches of the rights and freedoms of citizens.²⁵ Digitalization is a service quality, effectiveness, usefulness, and clarity.²⁶

In Ukraine, digitalization processes significantly affect the course of labor relations and the organization of labor at enterprises, institutions, and organizations. In recent years, employers and employees have had the opportunity to use electronic workbooks, read orders, notices, and other personnel documents through electronic means, and conduct electronic document management. Thus, the web-portal “DIIA” has developed a «tab» «Labor Relations», which includes the following headings:

- Social benefits and services – temporary state assistance to an unemployed person of retirement age (appointment of provisional state social aid to a jobless person at the retirement age, but does not have the right to a pension);
- income statement (Issuance of the income statement), income data (issuance of accrued wage data (income);
- accrued wage data within the maximum amount (issuance of data on accrued wages (income) within the maximum value);
- data on special working conditions (Issuance of data on special working conditions);
- certificate of employment and insurance experience (Issuance Certificates of length of service and insurance);
- Employment: status of the unemployed (granting the status of the unemployed); unemployment benefits (assignment of unemployment benefits);
- Housing stock – warrant for office accommodation (issuance of a warrant for office accommodation).²⁷

²⁴ President of Ukraine Volodymyr Zelenskyy. Official website.: Volodymyr Zelenskyy supports the strategy of digital transformation of Ukraine for the coming years, 2021, [<https://www.president.gov.ua/en/news/volodimir-zelenskij-pidtrimuye-strategiyu-cifrovoyi-transfor-66605>]

²⁵ Kornieiev, K.; Horobets, O.: Quarantine digitalization: what has changed and what challenges have arisen, 2020, [https://jurliga.ligazakon.net/news/194722_karantinna-ddzhitalzatsya-shcho-zmnilosya-ta-yak-vikliki-postali]

²⁶ Vovniuk, A.: Digitalization is the quality of services, efficiency, and transparency, 2021, [<https://dpss.gov.ua/news/didzhitalizaciya-ce-yakist-poslug-efektivnist-zruchnist-ta-prozorst-anatolij-vovnyuk>]

²⁷ [<https://guide.dii.gov.ua/register/event/43595a5c-8115-478b-adfa-4c78a4d51eba>], 12/09/2022

Therefore, both employees and employers can already use such electronic services that will provide the necessary information in one click. However, in our opinion, it is still a matter of concern to ensure the security of such information and to determine the range of persons who will have access to such information and who will be the owners and managers of such information.

The issue of transition to electronic workbooks is currently on the agenda. Thus, the Law of Ukraine “On amendments to certain legislative acts of Ukraine concerning the accounting of employee employment in electronic form” of February 5, 2021, № 1217-IX gives a full start to the transition to electronic workbooks (hereinafter – EWB).²⁸ Employment records will not be kept on paper employment records but on electronic ones. EWB is a set of information on people covered by state insurance, that is, the State Register of Compulsory State Social Insurance (thereinafter called the Register). Legislators took five years to introduce the EWB. Moreover, the employee will have the right to bring a paper employment record book so that the employer can make a record of the job, reward, or incentive. So, now the paper workbook remains in personnel practice.

Currently, another element of the impact of digitalization processes on the course of labor relations is the introduction of a qualified electronic signature (hereinafter – QES) to exchange personnel documents. Thus, from February 27, 2021, the regulations introduced in the Labor Code of Ukraine by the Law of Ukraine “On amendments to certain legislative acts of Ukraine on improving the legal regulation of telework, home working and flexible hours” of February 4, 2021, № 1213-IX, in particular: “Acquaintance of employees with orders (instructions), notifications, other documents of the owner or his authorized body on their rights and responsibilities is allowed using the means of electronic communication specified in the employment contract. In this case, the fact of the exchange of relevant electronic documents between the employer or his authorized representative and the employee is regarded as confirmation of acquaintance”.²⁹

Electronic signatures can be displayed in different ways, for example, in the form of a barcode or QR code. This is the so-called graphic mark Electronic signature. By the way, the file certified by the Electronic signature may not contain a graphic signature or seal – it all depends on the Accredited key certification Center (hereinafter – AKCC), which issued the certificate.

²⁸ Verkhovna Rada of Ukraine.: Law of Ukraine № 1217- IX “On amendments to certain legislative acts of Ukraine concerning the accounting of employee employment in electronic form”, 2021b, [<https://zakon.rada.gov.ua/laws/show/1217-20#Text>]

²⁹ Verkhovna Rada of Ukraine.: Law of Ukraine № 1213-IX “On amendments to certain legislative acts of Ukraine on improving the legal regulation of telework, home working and work with flexible hours”, 2021a, [<https://zakon.rada.gov.ua/laws/show/1213-20#Text>]

The employee can sign the electronic signature document in different ways – on the web-portal “DIIA”, through the PrivatSign module from Privatbank, or on the website of AKCC “PrivatBank” is installed on the computer. Another option is – Electronic signature from AKCC “Caesaris”. The date of acquaintance can be seen immediately from the graphic mark of such QES. This applies even in cases where the employee has sent the employer a signed document together with the inspection report, it is still better for the manager to check for himself whether the document is signed and whether it is valid.³⁰

The employee can sign the qualified electronic signature document in various ways – on the “DIIA” portal, through the PrivatSign module from Privatbank installed on the computer, or on the website of AKCC “PrivatBank”. Another option is – a qualified electronic signature from AKCC “Caesaris”. The date of acquaintance can be seen immediately from the graphic mark of such QES. This applies even in cases where the employee has sent the employer a signed document together with the inspection report, it is still better for the manager to check whether the document is signed and whether the signature is valid.

4. CONCLUSIONS

Despite the convenience and efficiency of such acquaintance with personnel documents, it is necessary to check the qualified electronic signature and print out the inspection report with information about the date of acquaintance. This applies even in cases where the employee has sent the employer a signed document together with the inspection report. It is still better for the manager to check for himself whether the document is signed and whether it is valid.

In our opinion, if the employer has decided to use digitalization processes and introduce innovative forms of work organization, it is necessary to:

- analyze the needs of employees in computers, as well as their skills in working with ICT and their application in work;
- reconsider the company’s approach to whether employees will have the right to use personal devices to connect to work servers and access data or whether the appropriate equipment will still be provided by the employer;
- establish conditions for reimbursement of expenses or financial support for employees working online to provide them with the equipment, internet access, and means of communication necessary to perform the job function; the cost of tools and equipment used for work, the ability to use office

³⁰ [<https://guide.diia.gov.ua/register/event/43595a5c-8115-478b-adfa-4c78a4d51eba>], 12/09/2022

equipment at home, or provide a one-time payment to employees for the purchase of equipment necessary for work;

- create conditions for employees to learn about the use of ICT, as well as methods of self-assessment and external testing of abilities and skills; how to contact technical support if they need help.

The system of factors for the formation of remote employment must be built, considering the segmentation of the labor market. The segmentation of the labor market can be built on the following features: geographical, demographic, social (education, professional structure, length of service, income, and savings, dismissal, unemployment, etc.); branch (dynamics of development, the size of the enterprise); the economic cycle of enterprise, industry, etc.); behavioral (employment motivation, degree of loyalty, willingness to work, emotional relationships, preferences, etc.) and psychophysiological (personality type, lifestyle, etc.). Remote employment, according to its essential characteristics such as flexibility, remoteness, virtuality, etc., corresponds to such parameters of the labor market.

Creating flexible forms of employment and virtual work teams for performers who are not tied to a particular office allows using mobile communications to maintain the necessary contact with each other and with customers. This, in turn, leads to the creation of new labor relations in cyberspace, based on the formation of certain social and labor remote relations between labor market participants, endowed with a high degree of flexibility, and on the other – is a high degree of risk of these relations, which require a certain level of self-organization from remotely employed workers.

Innovations in labor legislation make sense in today's information society. At the same time, such e-workbooks are, in fact, virtual, and it seems that in 5 years when the transition to EWB is fully completed, there will still be problems with the timely receipt of information about the length of service of employees. It is believed that the idea of introducing ID workbooks with chips would not be worse. Yes, on the front side, such a workbook will contain information about the last name, first name and patronymic of the employee, date of birth, and identification number; on the reverse side - a chip or reading tape, which after scanning would provide complete information on education, training, internships, special skills, abilities and work activities of the person. Such a workbook should be kept by the employer, who should be given the right to enter the necessary information. In parallel, all these data should be contained in the state data bank on persons in employment.

LITERATURE

1. [<https://guide.diiia.gov.ua/register/event/43595a5c-8115-478b-adfa-4c78a4d51e-ba>], 12/09/2022
2. Hann, I.H.; Viswanathan, S.; Koh, B.: (2011). The Facebook app economy, in: Robert H. Smith School of Business, Center for Digital Innovation, Technology and Strategy, Maryland, 2011, pp. 1-7, [<https://docplayer.net/4772910-The-facebook-app-economy.html>]
3. Katz, R.: The impact of broadband on the economy: research to date and policy issues, Geneva, 2012, [https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf]
4. Kornieiev, K.; Horobets, O.: Quarantine digitalization: what has changed and what challenges have arisen, 2020, [https://jurliga.ligazakon.net/news/194722_karantinna-ddzhitalzatsya-shcho-zmnilosya-ta-yak-vikliki-postali]
5. Kvetnoy, L.M.: Development of remote forms of employment in the modern world economy. Moscow, 2011.
6. Ludanik, M.V.: Remote employment in the Russian labor market: formation, development and mechanisms of regulation. Moscow, 2006.
7. Lutsenko, O.: Anticorruption compliance: International experience in legal regulation and innovation for Ukraine, *Humanities and Social Sciences Reviews*, 7(5) 2019, pp. 765-770.
8. Mandel, M.; Scherer, J.: The geography of the app economy, in: *South Mountain Economics*, 2012, [https://southmountaineconomics.files.wordpress.com/2012/11/the_geography_of_the_app_economy-f.pdf]
9. Moretti, E.: *The new geography of jobs*, Boston, 2012.
10. President of Ukraine Volodymyr Zelenskyy. Official website.: Volodymyr Zelenskyy supports the strategy of digital transformation of Ukraine for the coming years, 2021, [<https://www.president.gov.ua/en/news/volodimir-zelenskij-pidtrimuye-strategiyu-cifrovoyi-transfor-66605>]
11. Pupillo, L.; Noam, E.; Waverman, L.: *Digitized labor: The impact of the internet on employment*, New York, 2018.
– DOI: <https://doi.org/10.1007/978-3-319-78420-5>
12. Rinaldo, E.; Vezzani, A.: The impact of technological and organizational innovations on employment in European firms, *Industrial and Corporate Change*, 21(4) 2012, pp. 871–899. <https://doi.org/10.1093/icc/dtr069>
13. Tomashevski, K.; Yaroshenko, O.: Problems of labour legislation codification in Belarus and Ukraine: History, current situation and prospects, *Transition Studies Review*, 27(2) 2020, pp. 41-49.
14. Verkhovna Rada of Ukraine.: Labor Code of Ukraine, 1971, [<https://zakon.rada.gov.ua/laws/show/322-08#Text>]

15. Verkhovna Rada of Ukraine.: Law of Ukraine № 1213-IX “On amendments to certain legislative acts of Ukraine on improving the legal regulation of telework, home working and work with flexible hours”, 2021a, [<https://zakon.rada.gov.ua/laws/show/1213-20#Text>]
16. Verkhovna Rada of Ukraine.: Law of Ukraine № 1217- IX “On amendments to certain legislative acts of Ukraine concerning the accounting of employee employment in electronic form”, 2021b, [<https://zakon.rada.gov.ua/laws/show/1217-20#Text>]
17. Vovniuk, A.: Digitalization is the quality of services, efficiency, and transparency, 2021, <https://dpss.gov.ua/news/didzhitalizaciya-ce-yakist-poslug-efektivnist-zruchnist-ta-prozorist-anatolij-vovnyuk>
18. Yaroshenko, O.M.; Vapnyarchuk, N.M.; Burnyagina, Y.M.; Kozachok-Trush, N.V.; Mohilevskiy, L.V.: Professional development of employees as the way to innovative country integration, *Journal of Advanced Research in Law and Economics*, 11(2) 2020, pp. 683-695.
– DOI: [https://doi.org/10.14505/arle.v11.2\(48\).39](https://doi.org/10.14505/arle.v11.2(48).39)
19. Yaroshenko, O.M.; Lutsenko, O.Ye.; Vapnyarchuk, N.M.: Salary optimisation in Ukraine in the context of the economy Europeanisation, *Journal of the National Academy of Legal Sciences of Ukraine*, 28(3) 2021a, pp. 224-237.
– DOI: [https://doi.org/10.37635/jnalsu.28\(3\).2021.224-237](https://doi.org/10.37635/jnalsu.28(3).2021.224-237)
20. Yaroshenko, O.; Melnychuk, N.; Moroz, S.; Havrylova, O.; Yaryhina, Y.: Features of remote work in Ukraine and the European Union: comparative legal aspect, *Hasanuddin Law Review*, 7(3) 2021b, pp. 136-149.
– DOI: <https://doi.org/10.20956/halrev.v7i3.3218>
21. Yaroshenko, O.M.; Prokopiev, R.Ye.; Inshyn, M.I.; Maliuha, L.Ju.; Hnidenko, V.I.: Combating the illegal employment of third-country nationals in the member states of the European Union. *Krytyka Prawa. Niezależne Studia Nad Prawem*, 14(2) 2022a, pp. 202-218.
– DOI: <https://doi.org/10.7206/kp.2080-1084.531>
22. Yaroshenko, O.M.; Sirokha, D.I.; Velychko, L.Y.; Kotova, L.V.; Sobchenko, V.V.: Current problems of legal regulation of remote work in the context of the introduction of restrictive measures caused by the spread of Covid-19 in Ukraine and the EU. *Relacoes Internacionais no Mundo Atual*, 1(34) 2022b, pp. 1-16.
– DOI: <http://dx.doi.org/10.21902/Revrima.v1i34.5575>