Use of digital technologies in human resources management

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Abstract. The paper is devoted to the study and analysis of modern trends of our time, such as globalization, the transition to a network digital economy, mobility, digitalization that encouraging companies to search for new competitive models of business management. The formation and development of a new strategy integrated with business and HR strategies becomes a prerequisite for future competitiveness by transforming the business from a traditional to a technological company. In today's reality, digital HR management is inextricably linked to the formation and use of an innovative system for the introduction and dissemination of new knowledge, technologies and products at enterprises of the same region. Digital innovation in the human resources management system is a complete result of creative activity, which should be introduced into the labor market depending on the purpose. The paper identified the main reasons that impede digitalization in the field of personnel management, as well as the possibilities for their further solution, considered and analyzed the features of organizing a personnel management system at enterprises in the context of innovative digital transformation. The paper concluded that in recent year there has been an increase in the competitiveness of enterprises not so much due to new technologies for organizing production in the context of the transition to innovative development, but in terms of the introduction of personnel management methods using electronic digital technologies.

1 Introduction

The modern challenges of globalization, the transition from an industrial to a network digital economy, new business speeds, mobility and transparency, the upcoming digital revolution undoubtedly requires a revision of the business paradigm – transformation of a traditional company into a technological business. Business rules are changing due to rapid changes in the digital age – management models that provide performance, innovation, flexibility and adaptability compete with each other.

The digitalization in the human resources management has been relevant in recent years and is attracting increasing attention. It has already become clear to everyone that the process of digitalization in modern conditions is irreversible and enterprises should pay attention to this important aspect.

The purpose of the study is to consider the problems and prospects for the digitalization of HR (human resource) in modern conditions. This poses the need to address some tasks:

- to identify the main problems in HR digitalization;
- to assess the level of digital technologies for mastering digital skills by company's personnel;
- to analyze the level of application of digital technologies in HR management.

The study used methods of statistical and comparative analysis, as well as the methods of expert assessments, which made it possible to identify the main problems in the development of the HR digitalization.

The methodological basis of the study included the principles and methods of solving the problems and prospects for the digitalization of human resources in modern conditions.

Electronic management of human resources serves as an effective tool for relevant corporate functions using Internet resources [1]. The rapid evolution of artificial intelligence and robotics has deeply transformed approaches to electronic management of human resources, the next stage in development of which was the transition to the concept of digital management (digital HRM), which was for the first time theoretically and empirically described in publications in 2020.

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The concepts of "electronic" and "digital" management of human resources are used as synonymous within the framework of this paper. Most of the existing works describe digital management of human resources as a one-dimensional process or corporate practice [1].

As a result, the quantitative analysis considers human resources management as a generalizing characteristic of the level of spread of digital technologies among personnel management. However, more comprehensive analysis requires distinguishing between at least two components of digital human resources management: breadth and efficiency. Breadth refers to the numerical factor of introduction, or the breadth of the digital HR management [2]. Analogue mechanisms can be measured using a well-known model implying the identification of three interconnected types of HRM practices: development of abilities, improvement of motivation and expansion of opportunities (ability – motivation – opportunity, AMO) [3].

Thus, in a company where digital technologies provide a significant part of HRM processes, including recruitment, training and development, motivation, career advancement, etc., the breadth of digital human resources management will be higher regardless of its actual contribution to management effectiveness.

2 Materials and Methods

> Note that the HRM digitalization implies the achievement of the strategic goals of the enterprise, and the HR specialists are responsible for adapting employees of the organization and ensure their further stimulation.

Unfortunately, not all business leaders understand the importance of digital technologies and do not give them due attention.

HR specialists are directly involved in relieving business managers from routine tasks, and the use of digital technologies allows automating the solution of production issues.

Staff from among specialists with psychological education and able to understand mathematical problems play an important role in effective HR services. The demand for such specialists will increase every year. After all, HR specialists become a strategic center for the development of the enterprise, on which the formation of an HR brand depends.

In modern conditions, most enterprises prefer to conduct business online, which has become a trigger for the formation of new approaches in the field of human resources management in companies [4].

Digitalization in the management system, in the conditions of modern reality, is inextricably linked with the formation and use of an innovative system for the introduction and dissemination of new knowledge, technologies and products within one region.

With the transition to the digital economy and the use of digital technologies in various sectors of the economy, there is a need to revise the strategic goals of the enterprise and ensure further digital transformation of production processes. In the era of transition from the traditional economy to the digital economy, the competitiveness of enterprises is largely determined by the introduction of innovative technologies and prompt response to changes in the external environment. In modern conditions, most enterprises prefer to conduct business online, which has become a trigger for the formation of new approaches in the field of HR. This led to the development of corporate networks, online education, use of artificial intelligence in the management of production processes, creation of mobile applications that provide quick access to information. Note that the listed tools of the digital economy play a decisive role in business management in the modern world [5].

In a world that is rapidly changing and requires people to adapt quickly to changing conditions, people face a shortage of time for education to improve their skills, being able to buy things or spend a pleasant time to do what they love. Digital technologies, in turn, are aimed at reducing time spent on travel, shopping, provide the opportunity for education anywhere in the world regardless of the geographical location. This explains the relevance of the use of digital technologies in human resources management. This issue became especially relevant during the COVID-19 pandemic, when employees were transferred to remote work. Despite the quarantine, being at home, the staff of enterprises was able to perform work tasks as usual, preventing the downtime of the enterprise.

At the same time, the demand for digital technologies generates supply. Thus, there was a need to control the personnel of the enterprise and the work tasks performed, which gave rise to the demand for certain programs. Demand, in turn, led to the appearance of employee time control programs with the ability to broadcast what is happening on the employee's screen online. One of these programs was Kickldler, ActivTrak, Teramind, Hubstuff, Time Doctor. The characteristics of these programs are shown in Figure 1.

Today, the main problems in the field of HR digitalization are the lack of specialists with digital skills and the low level of HR automation.

In the context of increased competition, companies are interested that the employees improve their skills, gain additional knowledge and master innovative technologies to strategically develop entrepreneurial activity. In turn, in order to remain competitive, enterprise personnel need to perform tasks at the highest level, which requires further improvement of skills in the digital world on the job. Therefore, there was a need for online education, which, accordingly, gave rise to many online universities and various courses offering advanced remote training [6].

Distance learning has a number of advantages, primarily related to the ability to master programs from anywhere in the world using the Internet. The training takes place on a special educational platform, where a student has the opportunity to listen to lectures, complete homework and send it to the teacher, who, in turn, will answer the student's questions online and check the completed task.

To date, one of the famous online universities providing distance learning is Skillbox, which has become one of the leading online universities in the field of mastering professional digital skills. Skillbox offers professions in Internet marketing, programming, design, game development and others. In 2019, the online university became the winner of the Runet in the nomination

"Technologies and Innovations", and a year earlier – "Education and Personnel".

In the context of the COVID-19 pandemic, most companies actively began to use digital technologies in order to effectively operate enterprises and solve work-related tasks. According to various estimates, 44 % of enterprises plan to use a new management model in their activities in the near future, and 41 % of enterprises plan to make HR processes automatic [3].

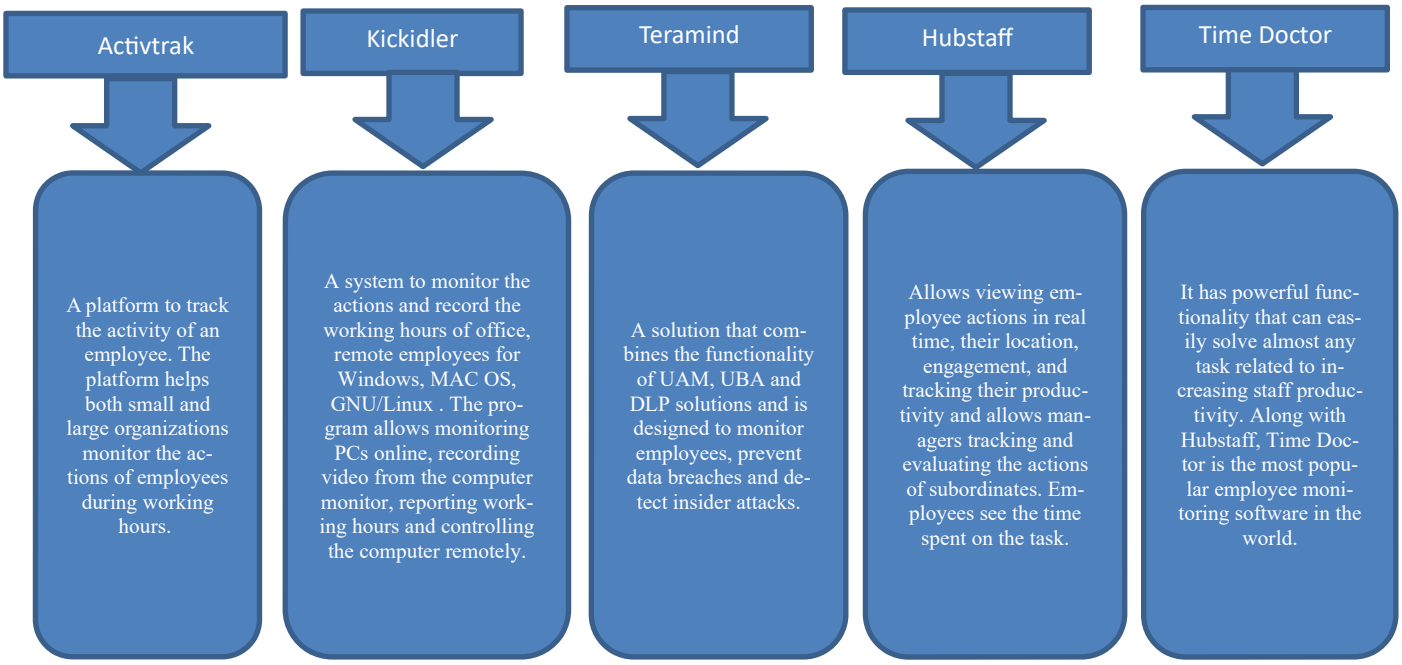

Fig. 1. Characteristics of employee working time control programs with the ability to broadcast what is happening on the employee's screen online

The COVID-19 pandemic has accelerated the process of HR digitalization. According to preliminary data, by 2025 the use of HR technologies will amount to $30 billion, and 20 million people will give heed to advice for a better choice of vacancies. SAP SuccessFactors, a leader in the world in human capital management, is one of the foreign companies that succeeded in the Russian market. Today, there are more than 120 million SAP SuccessFactors users worldwide, covering more than 200 territories.

The digitalization index of Western companies today is 2.08. Russian companies lag behind their foreign colleagues in terms of digitalization. The digitalization of Russian companies does not exceed 1.84. Today, many issues at enterprises are resolved using paper media and their indicator varies within 25 %.

The leaders in the use of digital technologies in the Russian HR segment are industrial enterprises, telecommunications companies and financial institutions. Enterprises in the field of transport logistics, services and oil and gas industry demonstrate the low level of use of digital technologies, although, the oil and gas industry has made a significant breakthrough in the application of digital technologies in recent years [7].

The *Future of HR* report was published in 2019, according to which 40 % of company leaders said they had a ready-made plan to work in the digital environment at the HR level. At the same time, only 37% of enterprise managers believe that HR is subject to changes due to the use of artificial intelligence. It should be emphasized that those managers who understand the importance of HR functions in strategic development of enterprises tend to quickly apply digital technologies in entrepreneurial activities than those managers who do not attach importance to the role of HR in increasing competition in the enterprise. At the same time, the former accounted to 67 % against 48 %.

Although the role of HR is recognized by business leaders, only 20 % of executives believe they are willing to apply analytics to human resources in the next two years against 12 % of those who emphasize an interest in artificial intelligence.

Today, investments in HR are increasing. Thus, 49% of HR leaders have already invested in human capital management, 32 % preferred to invest in cloud technologies. In the near future, 60 % of HR leaders plan to invest in predictive analytics, 53 % – in process automation, 47 % – in artificial intelligence [1].

3 Results and Discussion

Despite the active use of artificial intelligence, not all companies are ready to use them in their activities. These include 50 % of enterprises that noted that they are not ready to use digital artificial intelligence. At the same time, a high share of those who noted that investments in artificial intelligence brought significant results, such were 88 %: 35 % preferred advanced training for mastering digital skills and 33 % – analytics.

The above confirms that there is a significant difference between those who chose to use artificial intelligence in entrepreneurial activity and those who were not ready for digital transformations in HR.

On the other hand, most HR leaders believe, and this is more than 60%, that the use of digital technologies may reduce the employment rate. On the contrary, another part of HR managers think that the use of digital technologies will favorably affect the increase in employment and contribute to the creation of new jobs.

In today's world one of the obstacles to the introduction of digital technologies in HR is corporate culture. The staff of most companies notes that corporate culture is aimed at achieving the strategic goals of the enterprise and does not aim to introduce digital technologies for managing human capital. Today, the role of HR in HR management is increasing every year and should be focused on digital transformation due to increasing competition. The labor market in the context of digitalization is transforming, which leads to new professions such as the internet marketing specialist, web developer, graphic designer and others. Therefore, HR specialists should quickly respond to changes in the external environment and be able to work in new conditions, namely, automate the processes of recruiting personnel for vacant positions, use digital technologies in solving everyday problems and manage artificial intelligence.

Currently, the role of digital practices in the activities of companies will be assessed by taking into account the strategic aspects of personnel management in overcoming modern socio-economic challenges. Relevant departments need to demonstrate strategic thinking, flexibility, efficiency and customer focus while maintaining the full range of services.

The potential of digital technologies ensures the achievement of this goal and the improvement of HRM, the digitalization of which may serve as a means of solving operational, relational and transformational tasks of the organization [8].

The effectiveness of digital human resources management is a qualitative characteristic of digitalization reflecting the level of integration of digital practices into the core activities of companies, the ease of their use for solving routine tasks, the "strength" of digital tools [5, 6]. For example, only one aspect of personnel management can be digitalized in a company, but the outcome from the introduction of technologies will be significant. If Russian business has only recently begun digitalization of HRM, which therefore has quantitative (breadth) rather than qualitative (efficiency) characteristics, then many foreign countries have already accumulated much larger experience. It allows HRM transformation researchers using not only the examples of individual companies in the analysis, but comparing large amounts of data accumulated over several decades. The work [9] notes both the destructive (replacement of human resources by machines) and the transforming (increase in labor productivity) effects of digitalization on the labor market.

In recent years, only 25 % of HR specialists consider experience to be the main development tools in the short term and note that senior management considers experience to be a priority for HR specialists [10].

HR specialists also emphasize that there are difficulties with the management staff, which do not take into account the features of generation Y affected by the development of digital technologies. They are more difficult to motivate and focus more on the introduction of a healthy lifestyle. Only in recent years, certain shifts have been planned in this direction and business leaders are trying to listen to the opinions of different generations, including the generation Y [11].

Schneider Electric, a French power engineering company that pays close attention to improving the well-being of employees and giving them the opportunity to make decisions on their own, is considered a pioneer in the formation of a person of a new era taking into account digital transformations [9].

There are four types of organizations depending on the level of digitalization of the strategy and business operations [12]. In the first, analogue, the potential for digitalization does not cover either the strategic or the current activities of the company. In the second case – digital organization I (operational application) – the application area of the digitalization is only limited to the management of operational processes to increase their speed and quality, as well as to reduce costs. The third type, digital organization II (strategic compliance), involves the coordination of technological capabilities with the strategic goals of the organization, and digitalization covers all business operations and part of the company's strategy. In the last type, digital organization III (strategic integration), technologies are directly integrated into the strategy development process, and digital potential is used to find new directions for business development [12].

4 Conclusion

Based on the above, it should be noted that the digitalization of HR is hampered by a number of problems associated with the low qualification of personnel with digital skills and an insufficient level of automation of HR processes.

First, we note that in the context of the use of digital technologies, it is necessary to quickly respond to changes in the external environment. Thus, the demand for digital technologies for monitoring the workflow of employees led to the emergence of various programs for monitoring the working hours of personnel.

Secondly, the introduction of digital technologies in HR management requires staff with digital skills. To meet the demand for qualified personnel in the labor market, online universities began to emerge allowing them to acquire appropriate digital skills irrespective of their location. The only condition for taking the relevant courses is the access to the Internet.

Thirdly, the main enterprises using digital technologies in HR are enterprises in the field of IT, finances and industry. Other sectors of the economy are lagging behind in the use of digital technologies. There is an imbalance between entrepreneurs who are ready to introduce digital technologies and those who are not ready to speed up the process of digitalization. About 88 % of enterprises invest in digital technologies to a certain extent, and 60 % of managers believe that the use of digital technologies will decrease the level of employment.

Knowledge and information in today's world is an integral part of the business system of any production enterprise. Employees of manufacturing plants use many tools and methods to work with knowledge, information and ideas. The idea generated from accumulated knowledge,

information and practical experience is always at the heart of any innovation and innovation process.

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