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DIGITALIZATION OF THE HR-MANAGEMENT SYSTEM OF THE ENTERPRISE IN THE CONTEXT OF GLOBALIZATION CHANGES

Abstract. The article is about investigating and formulating methods of digitalization of the HR-management system of the enterprise in the context of globalization changes by means of HR-technologies and HR-functions transformation analysis.

The object of the research is the modification of the HR-technologies, factors influencing the development of the HR-function in times of digitalization.

Research methods are a set of theoretical and methodological, economic and applied issues of definition, development and implementation of the process of digitalization of the HR-management system of the enterprise in the context of globalization changes. It was analysed scientific articles connected with digitalization processes, digital products and HR-solutions, directions of changes in HR-management digitalization process, influence of globalization changes at the HR-management system of the enterprise.

The article provides an understanding of the role of digital technologies in HRM, opportunities provided by digital transformation of HR-management system. It is proved that in today's conditions, the HR-function of the enterprise should be implemented through flexibility, integration into the business and be able to attract, retain and develop talent. It is analysed how globalization changes and actualization of existing HR-technologies influence human capital market. Among the total investment in digitalization of HR-processes, about half (49%) is aimed at implementing software solutions for human capital management, a third (32%) covers the implementation of cloud services, and in the near future plans to increase investment in forecasting, improved solutions process automation, artificial intelligence.

It is investigated the evolution of HR-functions under the influence of digitalization and found out the relevance and directions of digital technologies implementation in HR processes. The article reveals the main directions of HR-management digitalization changes: digital workforce, digital workplace, digital HR. The key opportunities that digitalization brings to HR-management have been substantiated. To get the most out of advanced technologies, HR-competencies must be clearly defined, correlated with business requirements, differentiated by functions, roles and levels, updated at the right time, applied to perform any HR-management functions. It is analysed opportunities provided by digital transformation of HR-management system. Digital economy, human capital and information technology play a crucial role in ensuring sustainable economic development.

The main results of the research can be applied in the practical activity of enterprises in order to implement HR-management system digitization path. Further research needs to be taken in

the field of the HR-technologies development due to fast-moving digital decisions and in accordance with specifics of the domestic countries' globalization and digitalization influence.

Keywords: digitalization, HR-management system, globalization, globalization changes, sustainability, HR-technologies, human capital, digital HR, HR-functions, artificial intelligence.

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ЦИФРОВІЗАЦІЯ СИСТЕМИ HR-МЕНЕДЖМЕНТУ ПІДПРИЄМСТВА В КОНТЕКСТІ ГЛОБАЛІЗАЦІЙНИХ ЗМІН

Анотація. Присвячено дослідженню і формулюванню методів цифровізації системи HR-менеджменту підприємства в контексті глобалізаційних змін за допомогою аналізу трансформації HR-технологій та HR-функцій.

Об'єктом дослідження є модифікація HR-технологій, фактори, що впливають на розвиток HR-функції в часи цифровізації.

Методами дослідження виступають теоретичні та методологічні, економічні підходи щодо питань визначення, розвитку та впровадження процесу цифровізації системи HR-менеджменту підприємства у контексті глобалізаційних змін. Проаналізовано наукові статті, пов'язані з процесами цифровізації, цифровими продуктами і кадровими рішеннями, напрямками змін у процесі цифровізації управління персоналом, впливом глобалізаційних змін у системі HR-менеджменту підприємства.

Стаття надає розуміння ролі цифрових технологій у сфері HR-менеджменту, можливостей, що забезпечуються цифровою трансформацією системи HR-менеджменту підприємства. Доведено, що в сучасних умовах функція управління персоналом підприємства повинна реалізовуватись на засадах гнучкості, інтеграції в бізнес і мати можливість залучати, утримувати та розвивати таланти. Проаналізовано, як глобалізаційні зміни та актуалізація наявних HR-технологій впливають на ринок людського капіталу. Серед загальних інвестицій у цифровізацію HR-процесів приблизно половина (49 %) спрямована на впровадження програмних рішень для управління людським капіталом, третина (32 %) покриває впровадження хмарних сервісів, а найближчим часом планується збільшення інвестицій у прогнозування, удосконалення рішень автоматизації процесів, штучний інтелект.

Досліджено еволюцію HR-функцій під впливом діджиталізації та з'ясовано актуальність і напрями впровадження цифрових технологій у кадрові процеси. Розкриваються основні напрями змін щодо сфери управління персоналом унаслідок цифровізації: цифрова робоча сила, цифрове робоче місце, цифровий персонал. Обґрунтовано ключові можливості, які цифровізація надає сфері управління персоналом. Щоб отримати максимальну віддачу від передових технологій, HR-компетенції мають бути чітко визначені, співвіднесені з вимогами бізнесу, диференційовані за функціями, ролями

і рівнями, оновлені в потрібний час і застосовані для виконання будь-яких функцій управління персоналом. Проаналізовано можливості цифрової трансформації системи HR-менеджменту підприємства. Цифрова економіка, людський капітал та інформаційні технології відіграють вирішальну роль у забезпеченні сталого економічного розвитку.

Основні результати дослідження можуть бути застосовані у практичній діяльності підприємств з метою цифровізації системи HR-менеджменту підприємства. Необхідність подальших досліджень у сфері розвитку HR-технологій зумовлена швидкоплинними цифровими рішеннями і відповідними особливостями глобалізаційних процесів та їхнього впливу на окремі країни.

Ключові слова: цифровізація, система управління персоналом підприємства, глобалізація, глобалізаційні зміни, сталість, HR-технології, людський капітал, цифровий HR, HR-функції, штучний інтелект.

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Introduction. Globalization, changings in consumer behaviour, transition to a digital economy, staff mobility, digitalization — all that is a modern trend that force companies to seek new models of business management. The concepts: «digital economy», «knowledge economy», «information society» form a new economic system that replaces the industrial paradigm. Significant acceleration of the advanced technologies development processes contributes to a significant increase in their penetration into all spheres of economic and social life, in particular in the processes of organizations managing and doing business. At the same time, digital transformations change the ways of carrying out management activities, transform change management processes, lead to the emergence of digital thinking and revolutionize the experience of employees, requiring the actualization of existing HR-technologies. Modern companies realize that their most powerful asset and competitive advantage is people. Human capital market under the influence of robotics and automation acquires the characteristics of volatility, which at the same time poses a threat in the form of difficulties in attracting human capital of the required quantity and quality, and on the other hand provides opportunities for a fuller realization of potential and talents of an available human recourses, which slows down or loses the necessary relevance without using of advanced HR-technologies. That is why the topic of digitalization of HRM system is so relevant.

Literature review. There are lots of scientific works related to the HR-management system, less of them connected with the globalization and digitalization changes and its influence at the HR-management system of the enterprise. Different scientists give different results, so let's look deeper and stop at the most relevant for this research.

The usage of digital technologies in HR-management changes almost all aspects of the personnel management system: personnel requirements, the system of recruitment and selection of personnel, motivation, organization of labor relations, methods of personnel management [1—3]. However, Pimenova E. M. [4] analysed that the key indicator of a high level of digitalization is the adoption of management decisions based on objective business analysis data, as well as the use of technological tools to improve the stability of enterprise functioning. In that case, analysis of financial and economic activities makes it possible to design necessary strategic and tactical plan for the enterprise development, revealing its reserves of production efficiency increasing [5—7].

Some scientists think that the most important changes in HR management system connected with talents, whether digitalisation transforms the role of HR professionals in identifying talent [8—10].

Some researchers emphasize the growing role of Artificial Intelligence (AI) in Human Resources (HR) to design enhanced digital employee experience [11; 12].

It's interesting approach of H. Zhao [13] about studying the modern possibilities and effectiveness of the application of virtual and augmented reality technologies in the field of managing human recourses (HRs) and basic operational corporate business processes.

So, authors studied a number of scientific works with valuable outputs, but only couple of them provided a brief and consistent view of digitalization of the HR-management system of the

enterprise in the context of globalization changes by means of HR-technologies and HR-functions transformation analysis. However, the impact of digital technologies on human resource management is intensifying, which requires deeper analysis of the HR-processes transformation process at the enterprise.

The purpose of the article is to investigate and formulate methods of digitalization of the HR-management system of the enterprise in the context of globalization changes by means of HR-technologies transformation analysis.

Methodology (material and methods). The object of the research is the modification of the of HR-technologies, factors influencing the development of the HR-function in times of digitalization. Research methods are a set of theoretical and methodological, economic and applied issues of definition, development and implementation of the process of digitalization of the HR-management system of the enterprise in the context of globalization changes. It was analysed scientific articles connected with digitalization processes, digital products and HR-solutions, directions of changes in HR-management digitalization process, influence of globalization changes at the HR-management system of the enterprise

System analysis has been used in the understanding of the subject of this research, i.e., what is digitalization of the HR-management system, how globalization changes influenced HR-management system, what changes in HR-system are better for implementation. Based on this analysis, HR-management system digitization path has been created in accordance with peculiarities of HR-technologies implementation. Using *synthesis*, a number of conclusions were made to create a clear concept of the cause-and-effect relationships between the globalization changes and the way of actualization of existing HR-technologies.

Using the *analysis*, a logical sequence of factors and their interrelationships was established within the entire HR-process under different circumstances. Identified elements indicate the directions of changes that need to be implemented in the HR-management system for its stable functioning under different conditions of nowadays business conduction.

Carrying out *functional analysis* helps to find out opportunities provided by digital transformation of HR-management system and to formulate how these changes influence the activity of the whole enterprise.

Results and discussions. Transition to a digital economy significantly transforms all the traditional functions of company management, and especially the field of HR-management (human resource management, HRM). It should be noted that today the term «human resource management» is ahead of the popularity of the term «personnel management». The introduction of the term «human resource management» is due to the focus on the fullest and most rational use of human resources in a constantly changing environment. In general, the HRM digitalization has gone through certain evolutionary stages — from personnel management (personnel accounting — payroll — assistance in working with staff) with a predominant accounting function to a human capital management (digital processes — HR-analytics — integration of HR-processes — management self-service) with an emphasis on creating competitive advantage. This is due to the awareness of the economic feasibility of investing in a human, focusing on the development of his abilities and skills.

In general, human resource management plays an important role in the digital transformation of business, ensuring unity of actions and involvement of staff in implementing changes, preventing resistance, improving corporate culture and high-quality human capital. At the same time, changing and developing due to the same digitalization, based on the introduction of the latest HR-technologies, optimization of HR-processes.

HR management digitalization involves changes that occur in three directions (*Fig. 1*). In general, the digital space is an extremely effective system of socio-economic relations, and digital technologies directly affect its key element — added value. Penetrating many areas of economic activity, digital transformation projects should stimulate investment, transform traditional industries into efficient, high-tech competitive industries, as well as create a number of new opportunities for the realization of human potential.

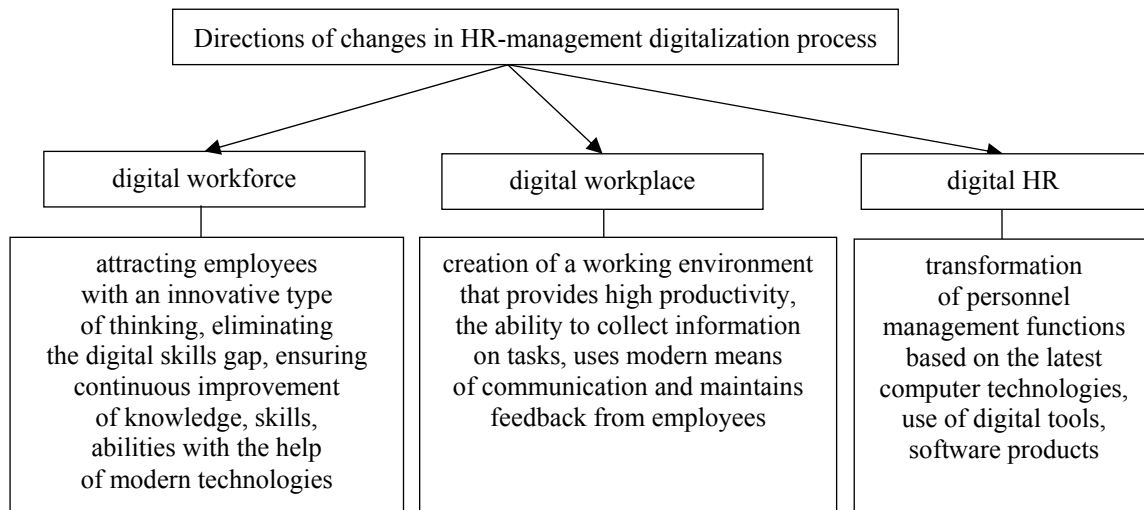


Fig. 1. Changes due to the digitalization of the HR-management system of the enterprise
 Note: created on the base of [14].

Unequivocally, in the near future the development of the HR-function will be significantly influenced by artificial intelligence and digitalization of the economy. Digital transformations are associated with changes in management, which are based on technologies of the Internet of Things, artificial intelligence, blockchain, machine learning, Industry 4.0, Big Data in all spheres of public life [15; 16].

Digital HR involves the use of social networks and digital platforms, large data analytics, cloud services, artificial intelligence capabilities, augmented reality, special mobile applications, which while providing significant benefits in the implementation of HR-activities leads to enhanced cross-functionality of the specialist, increases competence and professional requirements. At the same time, the most relevant use of digital HR is for companies in growth and expansion, large and international companies, with high importance of investment attractiveness and a significant number of vacancies, or those that pay special attention to quality selection and adaptation of employees.

According to the International Center for Excellence in Human Resource Management and Change in the UK, only 39% of executives in the world today believe that their companies are successful in the digital society, 37% feel confident in their ability to reorganize their human resources and adapt to a new realities, the use of analytics and artificial intelligence, and 27% acknowledge the difficulties in the transition to the digital environment because they do not see HR as a value-creating factor, ignore analytics and are generally afraid of using artificial intelligence and do not even develop digitization plans. Among the total investment in digitalization of HR-processes, about half (49%) is aimed at implementing software solutions for human capital management, a third (32%) covers the implementation of cloud services, and in the near future plans to increase investment in forecasting, improved solutions process automation, artificial intelligence (Fig. 2).

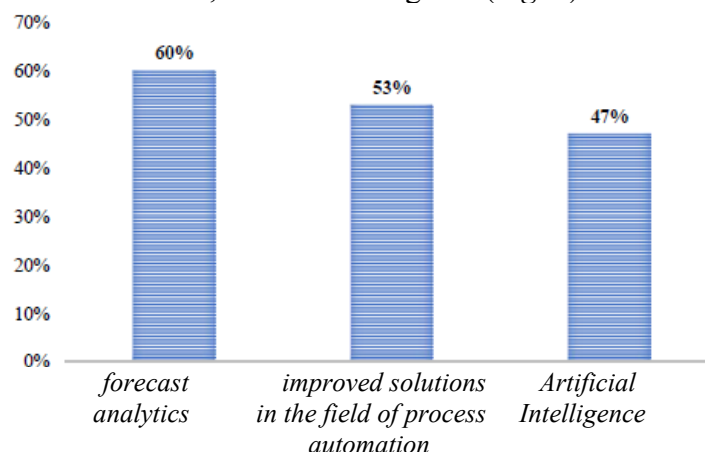


Fig. 2. Digital products and HR-solutions in which it is planned to increase investments
 Note: created on the base of [17; 18].

Digital conversions are a challenge. Countries that have reached the highest level of digital maturity have had to deal with complex cultural, organizational, and technical challenges, and only taking all these factors into account has made these transformations successful. In order to become today’s digital leaders in specific areas of the economy, it is necessary to identify priority digital projects that are implemented by specific organizational teams.

In the context of modern development of the HRM-function, it is advisable to pay attention to the most common probable trends that will be inherent in changes in HR-management (Fig. 3).

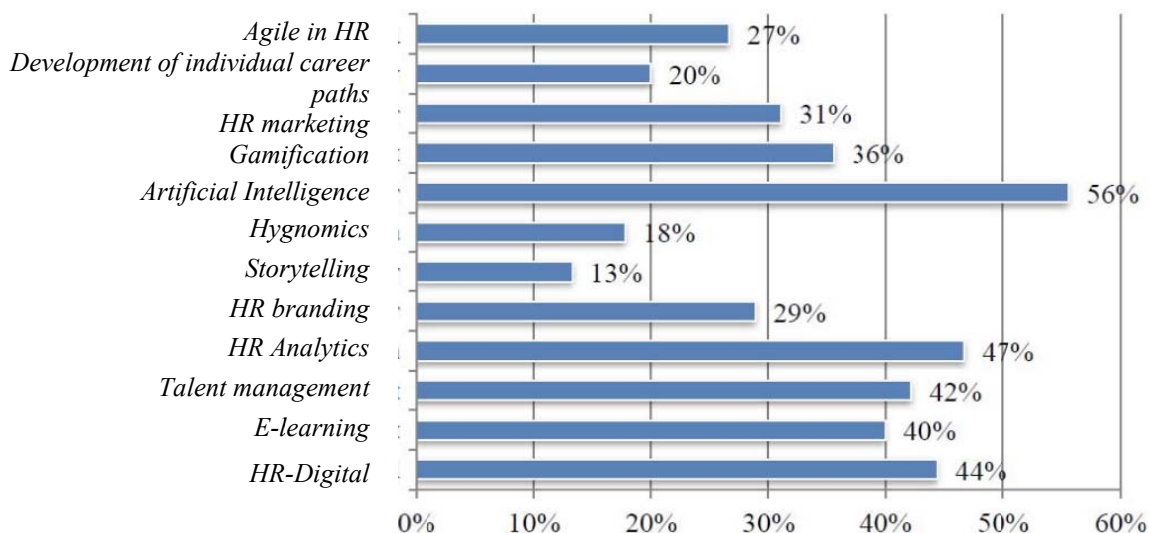


Fig. 3. Factors influencing the development of the HR-function in times of digitalization

Note: created on the base of conducted business leaders’ surveys.

So technological revolution translates HR-technologies into digital formats, automates most HR-functions at the enterprise. Let us dwell in more details on the possibilities provided by the digital transformation of HR (Table).

Table

Opportunities provided by digital transformation of HR-management system

№	Digital changes	Functionality	Practical use
1	Automation of HR-processes based on the use of integrated mobile applications	Helps to perform both: - simple management functions (time management, determine meeting place, track movements and report delays, deliver multimedia messages, including training, control stress levels and regulate the course of the working day, optimize action plans); - specific HR-functions (online recruiting, automation of HR-services, tracking and evaluation of quality, online training, development and career advancement, compensation, performance management using gamification, measuring and increasing engagement, providing feedback)	Uber, Uklon, Arbnb, KFC
2	Digital integration of HR with cloud services	- facilitate the recruitment process (streaming requests from many sources, automatic processing of information for decision-making and quick feedback tools); - improve the quality of working life (by facilitating communications such as «subordinate-manager»; automation of evaluation and rating, achieving greater fairness and confidence in the results); - expand the availability of innovations (preservation and dissemination of creative ideas); - reduce workload (automation of routine work, reduce time and resources for the design and storage of supporting documents); - increase the security of HR-information (risk reduction of unauthorized access to information and its loss)	Talentsoft, Android, Twitter

Table (continued)

№	Digital changes	Functionality	Practical use
3	Forecasting people-analytics	<ul style="list-style-type: none"> - visualization and analysis of large amounts of data in the global dimension and scale; - combines methods of forecast scenarios of development and intellectual analysis; - is an effective tool for decision making and forecasting in order to avoid the subjectivity of human thinking 	Amazon, Walmart, Tesco
4	Virtual Reality (VR)	<ul style="list-style-type: none"> - helps new candidates to instantly get an idea of the organization and performance of work within the company due to internal space virtualization, understand whether they share visions, values and corporate culture; - facilitate on boarding and adaptation processes, while providing recruiters with information about their behaviour, personal characteristics and features; - expands opportunities for attracting talents, training and development processes, reduces the gender gap in employment process 	hotel chain Hilton, offices of Deutsche Bank and company Vantage Point
5	Artificial Intelligence	Integrated software products, sophisticated algorithms for responding to actions and words of users allow to create an «image of a person» capable of interacting effectively with job candidates, new employees undergoing adaptive training, specialists in benefits and compensations for salaries and bonuses, HR-managers and line managers when creating analytical reports	ability to perform intellectual operations by analogy with the human brain

Note: created on the base of [19; 20].

The use of artificial intelligence in HR-management imposes new obligations on companies, which transforms the nature of performing specific functions of human management. To get the most out of advanced technologies, HR-competencies must be clearly defined, correlated with business requirements, differentiated by functions, roles and levels, updated at the right time, applied to perform any HR management functions.

In other words, it is a tectonic shift in the functioning of human resources and it is advisable to identify changes in the labour market that affect the development of digital HR. First, against the background of expanding the possibilities of production automation and the use of artificial intelligence, there are concerns about the possible reduction of jobs in both production and control. Unemployment threatens both low-skilled workers, whose work can be automated, and relatively skilled employees who are engaged in information processing. At the same time, secondly, the development of the digital economy creates new jobs and professions for highly qualified employees, there are emerging new production tasks related to the automation of production and economic life, which creates a compensatory effect in the field of employment.

That is, in a digital economy, human capital and information technology play a crucial role in ensuring sustainable economic development. In this regard, the training of highly qualified specialists taking into account the needs of the market and current trends in digital technologies, the effective implementation of which is accompanied by accelerating economic growth, increasing the number of jobs, improving the quality of services, is of particular importance. To maximize the potential of digital technologies, we need new professionals with modern knowledge, digital skills, capable of self-learning, solving complex problems in a constantly changing environment. Due to the rapid introduction of digital technologies and the introduction of smart working, the formation of digital skills of enterprise personnel is of particular importance. With this in mind, the digitalization of HR-requires the mastery of non-specific, cross-functional competencies based on the technical characteristics of the software and the features of its management.

In particular, in the digital economy, jobs are no longer tied to physical places. Some of them become «digital», virtual, mobile, ie those that do not require a permanent presence of the employee in the workplace. The concept of «digital workplaces» is spreading extremely fast in the business environment and is positively perceived by the vast majority of employees who like flexible ways of working, the opportunity to work at home, on vacation, ie from anywhere.

Transformation of HR-technologies also leads to updating and expanding the competencies of HR-specialist, digital competence, a certain cross-functionality, as it will require more complete mastery of the technical characteristics of the product used, while part of the functionality will be gradually automated.

At the same time, at present, most of the implementation of advanced HR-technologies in Ukrainian companies is carried out point by point and not always consistently. There are significant differences in the perception of the need for change among senior and line management, which requires in-depth analysis and evaluation of existing experience, placing emphasis in the implementation of a new type of HR-management. Digital technologies may be more common, but they are far from being fully used by HR-managers. Many HR-departments still do not have a digital format. Anyway, note that the use of new technologies does not make HR-digital. Digital HR must also reconcile culture, talent, structure and processes to balance efficiency and innovation, as well as provide a visible impact on an organization that is constantly transforming. The digital HR-path of any company should include four stages (*Fig. 4*).

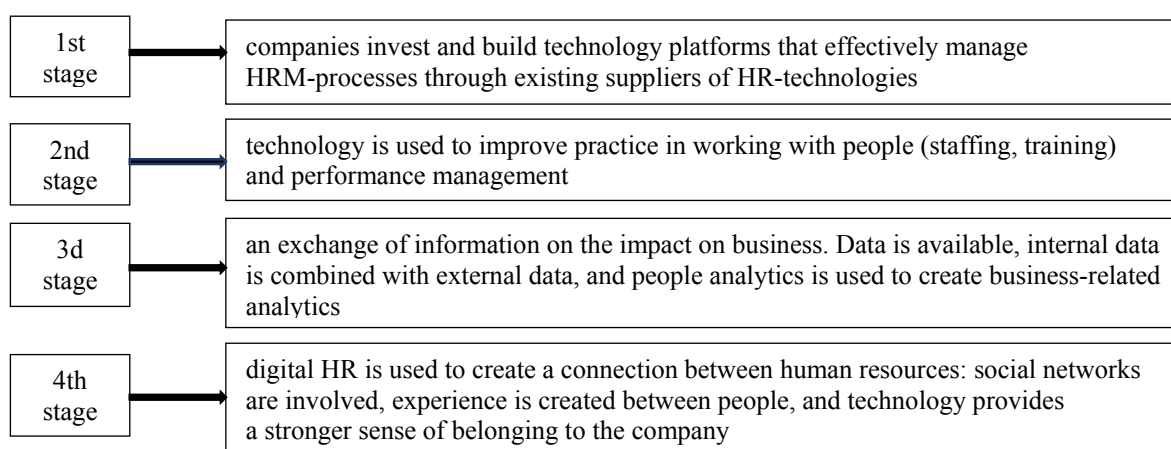


Fig. 4. HR-management system digitization path

Note: created on the base of [5; 11].

The generally accepted point of view is that nothing happens without the initiative and support of the owner. It is true: you can «bombard» shareholders and top management as much as you like with proposals for optimizing the HR-function or any other. But if they have not matured the need to act and change, there will be no benefit from these efforts. Perhaps that is why today there is a contradiction between the complexity of the tasks set for HR and the resources that the business is ready to allocate for the digitalization of HR-functions, without which these tasks cannot be solved. This does not mean that business have to wait until digitalization really affects the entire business, including the HR-function. Today, more companies start digitalization projects, and they often look like a chain of local projects, a series of initiatives that then add up to a business transformation program for the entire company.

Conclusions and recommendations. Every year the growth of the world market for HR-technologies is gaining momentum. The American company Grand View Research predicts that by 2025 it will reach \$ 30 billion. The main catalyst for growth was the development of Performance and Talent Management solutions. More than 20 million job seekers are expected to watch automated tips on how to rank higher in job matching algorithms in the near future. Another trend that is observed in the global HR-Tech market is the growth in the number of SaaS solutions. Research shows that there is a significant gap between those companies that are actively implementing changes, confidently use new resources and technologies to improve HR-processes and those that occupy a waiting position. Passive surveillance leads to significant losses of competitiveness, as companies not only have the opportunity to invest in their own capital, but also in the near future risk losing access to a workforce with unique qualities and characteristics, which today determines the success of companies in the markets.

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