HRM-Ecosystem of the Organization in the Context of Global Challenges

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Abstract—**The article substantiates the need to design a new model of a personnel management system – electronic human resource management, which is an ecosystem that provides full online support in managing all processes, actions, data and information necessary for human resource management in a modern company, defines its essence and content, shows the purpose, objectives, levels of electronic human resource management. The functions and results are shown, methods and opportunities for the introduction of electronic human resource management are proposed. It is shown that the introduction of electronic human resource management increases the efficiency of personnel management processes by concentrating personnel information in a centralized data bank, speeding up information processing, reducing errors and the amount of duplicated work, reducing less productive activities in the field of human resources and its reorientation to strategic objectives.**

Keywords— **Global challenges, HRM ecosystem; HRM technologies, electronic human resource management (E-HRM), digitalization, web technologies, information system.**

I. INTRODUCTION

The challenges of the XXI century: the globalization of the economy, the fourth industrial revolution, the digitalization of the economy and society, the complex epidemiological situation caused by the COVID-19 pandemic, the growing demographic imbalance, changing values, social ties, pose the task of modern organizations to radically restructure the ways of doing business, transformation of business strategies and business models in order to focus on key competence while simultaneously bringing everything that does not concern this key competence into the so–called ecosystems - clouds, networks, platforms. An organization in the face of global challenges should be mobile, dynamically developing, capable of quickly developing and bringing new products to the market, with a flexible structure.

HR management in these conditions acquires a unique role: HR becomes a strategic business partner [6], which should help the organization's management to adapt to new management methods and technologies, the organization's employees to use new models and working conditions, the organization as a whole to adequately respond to global challenges and adapt to changes [6].

This transformation of the role of the HR service causes a change in the priorities of personnel management in the direction of: from administrative functions to the implementation of the strategic purpose of personnel management - achieving organizational excellence and social well-being in the organization.

The formation and development of the personnel management ecosystem, erasing physical, geographical, communication, hierarchical, etc. barriers, creates real conditions and opportunities for the implementation of these transformations in the HR sphere [11].

II. METHODOLOGY

Due to the constant changes in the external environment, any organization must improve the ways of adaptation to its conditions, one of the main tools of which is the ecosystem approach to the business environment, proposed in 1993 by business strategist J. Moore. According to this approach, business ecosystems are considered as "dynamic and jointly developing communities consisting of diverse entities that create and receive new content in the process of both interaction and competition" [10].

PwC's study of the activities of the most successful organizations in the conditions of the Fourth Industrial Revolution (4IR) (the so-called "digital champions") indicates that their success is largely determined by four critical ecosystem levels of business: ecosystem of solutions for clients, operational, technological and personnel subsystems [2]. As noted in the PwC report, "The personnel ecosystem makes possible the existence and supports the work of three other ecosystems" [2]. At the same time, many researchers note that changing the patterns of functioning of the personnel subsystem under the influence of the challenges of the XXI century often becomes a barrier to the development of both organizations and the economy as a whole. These trends, on the one hand, significantly increase the importance of personnel management in organizations, and on the other hand, pose new challenges to the HR service caused by the need to solve problems caused by global challenges caused by a wide range of factors, such as the globalization of the economy, the fourth industrial revolution, the digitalization of the economy and society, a complex epidemiological

situation, caused by the COVID-19 pandemic, growing demographic imbalance, changing values, social ties, etc.

These factors form the main trends of the XXI century, which have significant unexpected and often undesirable consequences, create serious challenges for the personnel subsystem, which are presented in Fig. 1.
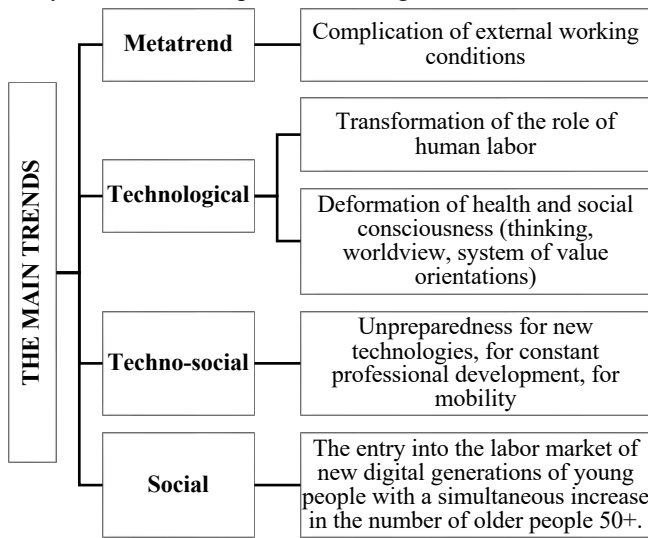

Fig. 1. Clusters of management competencies of the future

The challenges shown in Figure 1 become problems for the personnel management system, requiring specific solutions to be found. It is possible to distinguish the following groups of problems in personnel management caused by global challenges.

Thus, the complication of the external conditions of work requires greater flexibility in the organization of work, workplaces, employment in general; and also fundamentally changes the requirements for the competencies of employees.

The transformation of the role of human labor caused by the digitalization of all sectors of the economy creates problems associated with a sharp change in the professional structure of society (a decrease in the number of traditional professions, the emergence of new ones and modernization of the existing ones), modernization of the education system in the direction of lifelong learning.

The deformation of health and public consciousness causes the emergence of problems related to motivational, moral and ethical risks due to the digitalization of all spheres of life.

The unavailability of a significant part of the employed population for a technological future, for continuing professional education, professional, intersectoral and territorial mobility creates problems associated with the need to adapt and form basic skills of competent behavior in the labor market of various categories of the population.

The entry into the labor market of new digital generations of young people with a simultaneous increase in the number of older people 50+ creates problems associated with the violation of the natural personnel rotation of representatives of different age generations in the organization and the need to take into account the specific needs of representatives of generations Y and Z.

The analysis of the directions of influence of the main trends of the XXI century on the personnel subsystem allows us to conclude that it is necessary to implement an ecosystem approach in the personnel management of a modern organization using a biological metaphor in response to the complexity and uncertainty of the surrounding world.

III. RESULTS

The starting point for the implementation of the ecosystem approach is the recognition of the strategically important role of personnel management to achieve organizational excellence and social well-being in a complex and rapidly changing world by solving global problems of the XXI century [15]. The transition to the HRM ecosystem is a natural response to the changing needs of all participants in the system (employers, employees, providers, etc.,), as well as to the development of HR technologies.

An ecosystem approach to human resources management, offering greater diversity, adaptability, flexibility, productivity and scalability, can provide higher efficiency and effectiveness of activities compared to traditional management models.

According to modern ideas about the structure and content of ecosystems, the HRM ecosystem can be represented as a self-developing system [4] using innovative management approaches and including two components [20]:

– personnel ecosystem - a set of participants directly or indirectly involved in the "value chain" and covering both external and internal personnel, including "full-time employees, freelance employees, contract employees from digital agencies or the personnel reserve, work platforms on request, as well as employees who are involved together with partners for the implementation of common projects" [9];

– the HR technology ecosystem - the HR services platform (marketplace), which offers various HR technologies and services that meet the widest possible range of HR profile needs.

Below is the content of both components of the HRM ecosystem.

A. Personnel ecosystem

Personnel today is becoming a dynamic ecosystem - a diverse set of full-time and non-staff employees, GIG workers and other employees, which provides the organization with flexibility and the ability to respond promptly and adequately to global challenges. The personnel ecosystem encompasses the competencies and types of employees that are necessary to support efforts to improve the performance of the organization.

The personnel ecosystem can include different types of employees - from full-time employees to freelancers, gig and crowdsourcing workers [6, 9, 12].

In order to ensure the effective operation of personnel with the help of the personnel ecosystem, organizations must understand that "ecosystem" employees are "a valuable resource, a potential external personnel reserve and they should learn how to manage such personnel as their own" [6].

First of all, organizations should expand their approaches to personnel management to all employees of the personnel ecosystem.

In addition, HR services of organizations should be more actively involved in the search and selection of solutions related to employees who are not part of the organization's staff, whose number, according to experts, may be 30-40% of the organization's staff [14]. "The value proposition and

communication of the employer, adaptation programs, training, burnout tracking should cover all types of employees of the organization" [6].

The most important component of the personnel ecosystem is the competencies necessary for the implementation of the organization's goals in modern conditions. Based on the main trends of the XXI century, in the future all employees should possess the following competencies [3]:

- competencies that allow working with new technologies;
- competencies that help to work in conditions of uncertainty and ambiguity (for example, entrepreneurial skills and creativity); that increase the personal stability of the employee (for example, stress tolerance, adaptability) and also help awareness and acceptance of the future (for example, strategic thinking);
- competencies that help to cope with the increasing complexity of the external world (for example, ecosystem thinking, project thinking);
- competencies that allow you to do work that machines cannot do (for example, empathy and emotional intelligence).

Under the influence of these trends, a new model of competencies has now been formed. Thus, in the national program "Digital Economy of the Russian Federation" it is determined that in "the conditions of the digital economy there is a growing demand for specialists who possess a complex of rigid, flexible and special digital competencies" [5].

Thus, the modern competence model should include professional competencies (Hard skills) and supra-professional competencies (Soft skills).

Professional (technical or rigid) competencies (Hard skills) are the competencies necessary to perform specific professional tasks in a particular field.

Supra-professional (universal, flexible or soft) competencies (Soft skills) are over–subject, non-specialized competencies that allow you to interact effectively and harmoniously with other people and find optimal solutions to various issues and tasks.

With the development of digital technologies, experts identify another group of competencies - digital skills, but due to the rapid digitalization of all spheres of activity, these competencies can be included both in the group of professional and supra-professional competencies.

It should be noted that the deeper digital technologies penetrate into our lives and perform routine work, the more highly professional competencies become in demand.

Analysis of the main models of "competencies of the future" built on the consensus of a particular expert community under the auspices of various reputable Russian and foreign organizations, such as the Model "Foresight of Competencies – 2030" [8], the Target Model of Competencies 2025 [8], the Map of professional skills of the future 2020 [17], Competencies of the 21st century[1], the "4K" model [16], etc., allowed us to identify the following clusters of competencies of the future that are similar in meaning: Thinking and problem solving; Interaction and cooperation; Learning and openness to new things, with other people; Meta-competencies; Digital competencies Management of resources, processes; and projects.

The boundaries of the personnel ecosystem are established by assessing the factors characterizing the impact of the challenges of the XXI century on the organization, and determining on this basis the types of employees and competencies that are necessary to improve the efficiency of activities.

B. The ecosystem of HR technologies

This ecosystem includes two components:

- a fundamentally new model of the personnel management system - electronic personnel management (E-HRM),
- digital HR technologies.

E-HRM acts as a strategic tool for solving personnel problems of the 21st century [28].

E-HRM is, in fact, the transfer of human resource management functions to management and employees through web technologies. At the same time, the HRM service is freed from performing these functions, which allows it to focus not on operational, but more on strategic elements of personnel management.

According to foreign experts, E-HRM is the driving force of value creation [25, 27], which involves the integration of four aspects [23]: the content of E-HRM, the functions of E-HRM, target employees and managers, the results of E-HRM.

We will give a detailed description of the goals, results, management levels and areas of application of E-HRM.

1) The main goal of E-HRM is to achieve organizational excellence and social well-being by optimizing HRM procedures, reducing costs and reducing administrative functions to implement the strategic role of HRM [18]. In this regard, four mandatory requirements must be taken into account in E-HRM:

- HRM service orientation on strategic issues;
- increasing the flexibility of the HRM service in policy development and practical actions;
- improving the efficiency and reducing the costs of HRM service;
- provision of HRM services for the activities of managers and employees.

The goals of E-HRM are realized by solving the following tasks [19]:

- formation of an adequate, complete and permanent information system about candidates and vacancies at a reasonable cost;
- automation of personnel information;
- monitoring the balance of supply and demand of human resources;
- ensuring rapid response to employee-related;
- services and rapid decision-making in the field of HR;
- ensuring rapid response to employee-related;
- services and rapid decision-making in the field of HR;
- support in planning and policy development for the future;
- ensuring confidentiality and data security.

2) The following three levels of E-HRM are distinguished [13]:

- Operational E-HRM – deals with the main personnel operations in the administrative field. This applies, for

example, to the administration of wages and personnel data.

- Relational E-HRM – concerns more advanced HRM operations. The emphasis here is not on administration, but on HRM tools that support the main business processes: recruitment and selection of personnel, personnel development, performance management, business evaluation of personnel, motivation and labor stimulation. Relational E-HRM provides an alternative between the automation of recruitment and selection using web applications and the use of standard tools (job advertisements, paper application forms and letters, etc.).

- Transformational E-HRM – covers strategic issues of HRM activities: organizational change support, talent management, competence management, etc. The purpose of transformational E-HRM is "to provide the organization with personnel ready for change, using an integrated set of web tools that allow personnel to develop in accordance with the organization's strategy" [21].

3) As mentioned above, E-HRM is a way to implement the strategy, policy and practice of personnel management. Accordingly, the results of E-HRM can be called high commitment, competence, profitability and congruence [22].

4) The most important functions of the E-HRM system are: E-Employee Profile, E-Recruitment, E-Selection, E-learning & E-Training, E-Performance Management system, E-Compensation, Anywhere, Anytime Access Eliminate, E-HR Paperwork, E-Leave [14, 21].

With the introduction of the E-HRM system, HRM activities are facilitated and accelerated due to the concentration of personnel information in a centralized data bank, the use of this system by all managers and employees of the organization is simplified. "Constant access of HR service consumers to information will make processes more relevant and solutions more effective" [6].

In addition, E-HRM increases the efficiency of human resource management processes by speeding up information processing, reducing errors and the amount of duplicate work. E-HRM allows you to quickly exchange reliable information, which ensures high-quality and fast communication between all participants [26].

After the final formation, E-HRM will link all levels of management in the organization in a single information space, which will make it easy to transfer information about human resources from lower to higher levels [24]. This will reduce less productive human resource activities in order to focus on more productive work that allows human resource management to function at a strategic level.

The most effective method of implementing E-HRM in an organization is to create a center in its structure that provides collective HRM services (HR Shared Service – HRSS) [7].

With the help of HRSS, a real opportunity is created to provide internal HR services more flexibly and quickly, thereby improving both the parameters of the HRM system and the reputation of the HR service, creating more comfortable working conditions for employees.

Another component of the HR technology ecosystem is digital HR technologies, primarily HR analytics, cloud technologies and digital platforms [14, 23].

IV. CONCLUSION

An effective and well-thought-out HRM ecosystem is a key element of an organization on the way to realizing its strategic goals in modern conditions. The need to flexibly and promptly respond to the challenges of the XXI century, the development of technology and technology, increasing the requirements for the qualification of personnel and changing life priorities of the digital generation entering the labor market is the main reason that encourages organizations to look for new HR solutions based on a fundamentally different - ecosystem approach. The HRM ecosystem helps to achieve higher productivity through the rapid development of digital innovations, which can serve as a tool to focus more attention on value-added activities in the HR field in order to fully realize the potential of digital technologies and organizational strategy. The biggest advantage of applying HRM ecosystem practices is freeing HR service personnel from intermediary functions so that they can focus on strategic HR management issues.

Thus, it can be concluded that the HRM ecosystem is "an advanced business solution that provides full online support in managing all processes, actions, data and information necessary for human resource management in a modern company" [21].

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