СЛАВА УКРАЇНІ! ГЕРОЯМ СЛАВА!

АНАЛІТИК

АУДИТОРСЬКА ФІРМА

ЕКОНОМІКА ФІНАНСИ ПРАВО

ЩОМІСЯЧНИЙ ІНФОРМАЦІЙНО–АНАЛІТИЧНИЙ ЖУРНАЛ

№ 3'2024

(видається з 1994 року)

ISSN 2786-5517 (Online), ISSN 2409-1944 (Print)

https://doi.org/10.37634/efp.2024.3

Засновники:

Аудиторська фірма "Аналітик" спільно з Національною академією внутрішніх справ України

Статті обов'язково проходять

відбір, внутрішнє і зовнішнє рецензування

Рекомендовано до друку та до поширення через мережу Інтернет Вченою радою Національної академії внутрішніх справ України (Протокол № 3 від 20 березня 2024 р.).

Journal is included in the list of scientific professional editions of Ukraine, which can be published results of dissertations for the degree of doctor and candidate (PhD).

Order of Ministry of Education and Science of Ukraine № 886 of July 02, 2020 (economic sciences).

Order of Ministry of Education and Science of Ukraine № 1188 on September 24, 2020 (legal sciences).

Order of Audit Chamber of Ukraine № 353/10 on December 21, 2017 (accounting and audit).

Registration Certificate – KV № 21620-11520PR on October 12, 2015.

Journal is awarded the international identification number ISSN 2409-1944 and included in the international Scientometrics base Index Copernicus.

Journal's DOI: 10.37634/efp.

Founders:

Audit firm "Analityk" jointly with the National Academy of Internal Affairs of Ukraine

The papers must pass

selection, internal and external review

Recommended for publication and dissemination through the Internet by the Academic Council of the National Academy of Internal Affairs of Ukraine (Protocol № 3 of March 20, 2024). Full or partial reprint of the materials of the journal is allowed only with the consent of the editorial office.

Iryna VATS
student, National Aviation University
ORCID: https://orcid.org/0009-0004-0336-2557
e-mail: 6132319@stud.nau.edu.ua

Oksana KYRYLENKO
Doctor of Economics, Professor, Head of department, National Aviation University
ORCID: https://orcid.org/0000-0003-2406-7050
e-mail: ons@ua.fm

Valentyna NOVAK
PhD in Economics, Professor, National Aviation University
ORCID: https://orcid.org/0000-0001-6899-2016
e-mail: novak.nau@mail.ru

BENEFITS OF USING ARTIFICIAL INTELLIGENCE IN CORE HR PROCESSES

The paper examines the use of artificial intelligence (AI) in the main processes of human resource management. It is noted that in modern conditions, AI is considered an advanced tool that can optimize management processes in various sectors of the economy. The author discusses the new opportunities that AI opens up in human resource management, increasing the efficiency of actions at all levels and complementing human abilities. The main part of the paper is devoted to the advantages and potential opportunities of using AI at different stages of the employee's life cycle in a company. In particular, the author emphasizes the optimization of recruitment through analytical processing of large amounts of information rather than subjective judgment. The paper highlights such areas as operational efficiency, recruitment, onboarding, talent management, strategic planning, career development, and management changes where AI can make a significant contribution. The paper also highlights the issues related to the potential dangers of introducing AI technologies. The level of readiness and the degree of involvement of managers in the latest technologies in human resource management is indicated. The paper raises the issue of efficiency and solving various problems. In addition, examples of real software products are provided. The conclusions emphasize the general perspective of using AI in HR processes and identify areas for further research. In particular, there is a call for the development of mechanisms to protect employees from possible misuse of AI and the development of effective strategies for the implementation of technologies that would take into account ethical aspects. The final part of the paper sets the task for the business community and legislative bodies to actively work on standards for the use of AI in HR to create fair and effective HR management.

Keywords: human resource management, artificial intelligence, efficiency, recruitment, adaptation, training, motivation, new technologies, benefits, automation, chat bot

INTRODUCTION

Since the beginning of the last century, scientists have intensively studied and discussed the possibilities of practical implementation of artificial intelligence (AI). This technology is widely touted as an innovative tool that will change the world's work paradigm. The development of the economy and technology will require significant changes in the field of human resource (HR) management. The implementation and use of advanced technologies will determine the effectiveness of management activities and, in modern conditions, will be a key factor for maintaining the organization in a global environment of challenges. The development of AI, in general and in the field of personnel management, is one of the important priorities. In today's fast-changing world, finding truly talented people is becoming more difficult, but with the help of AI systems, organizations can quickly and easily optimize business processes.

Every day, AI is getting closer to actively influencing HR management in organizations, which can lead to significant changes in the field of work and the replacement of humans by AI in various industries. This, in turn, can lead to the reshaping of the labor market and increased competetiveness among specialists. However, the world is developing, so it is important to recognize the importance of the management mission in shaping the experience of implementing AI in organizations, as well as the readiness of managers to understand the practical benefits and consequences of using AI.

The **PURPOSE** of the paper is to analyze the growth and influence of AI on the HR management and defining benefits of using it in core HR processes.

METHODS OF THE RESEARCH

In researching various methods of analysis were applied. Literature analysis was used to evaluate relevant sources on the impact of AI on human resources management. The content analysis method was used to systematize and classify information, in particular, to emphasize the benefits of using AI at different stages of HR management.

RESULTS

AI technology has been considered since the early 2000s, although its history goes back many years. The emergence of AI has significantly changed the routine activities of companies. In the field of human resources (HR), AI has long been an important technology, so the main task of modern leaders in this area is to combine human and software resources in a reasonable way [12].

The term "artificial intelligence" was coined in 1956 by Dartmouth College professor John McCarthy, who led a group of scientists to explore the possibility of teaching machines to learn like children by developing formal thinking through trial and errors [7, 10]. The goal of the project was to determine how to program a machine to use language, abstract forms, and problem-solving that are characteristic of human nature, and on this basis to achieve con-

tinuous improvement [10].

AI is a technology used to perform tasks that require intellectual effort. In other words, it is a tool that is trained by humans to perform intelligent operations specific to humans. This technology is used in driving cars, face recognition, and now in the field of hiring. The difference between AI and conventional software is the speed of computation and the ability to process a significant amount of new high-quality data through advanced algorithms [13].

The use of AI is becoming commonplace, especially for administrative and legal help desks. They have long been using AI in the form of virtual assistants and chatbots to automatically answer questions from employees and clients.

In this case, AI directs inquirers to the correct legal documentation or the appropriate expert. For example, the Ministry of Economy has created a legal chatbot @TrudEconomBot to improve user experience. This chatbot allows users to find information on labor relations and get answers to various questions related to labor relations during the war. The service organizes answers by sections, providing information on vacation, pay and documentation during wartime events [9].

Thus, a chatbot can be responsible for the communication aspects of an organization's functioning, providing advice, replacing employees during their absence or vacation.

The development of AI opens up new opportunities for many areas. For example, the application of AI in HR can help automate many routine tasks and free up time for more important tasks.

HR professionals play an important role in modern business. They ensure the efficient operation of the organization by planning and managing the workforce. They are responsible for attracting and retaining talented employees, developing their potential, and creating a favorable work environment.

Human resources (HR) processes include four main components: recruitment, onboarding, training, and motivation (Fig. 1).

As shown in Fig. 1, recruiting is the first stage of HR management aimed at attracting talented and suitable candidates for the company. This process includes searching, selecting, interviewing, and making a decision on hiring new employees.

The next process is onboarding. It defines the ways in which new employees are introduced to the company's workflow and corporate culture. This process helps newcomers integrate into the team faster and more effectively, and understand organizational values and standards.

The training process includes the development of employees' skills and competencies to meet the requirements of a particular position and increase their productivity. This may include both internal training and the use of external training resources.

Motivation is the process of encouraging employees to achieve high results and make a meaningful contribution to the company's development. This may include reward systems, incentives, career development, and the creation of comfortable working conditions to stimulate efficiency and staff satisfaction.

HR professionals face a variety of challenges in their work, and one of the key problems is the large number of routine tasks that require considerable effort and time. These tasks include processing voluminous documentation, organi-
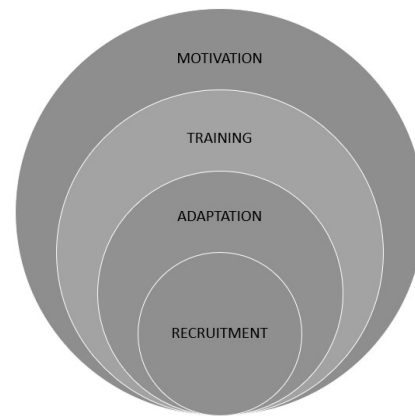

Fig. 1. Main human resources (HR) processes

zing work schedules, preparing reports, and so on.

In addition, HR professionals need to have the skills to effectively interact with employees, resolve conflicts, and implement training and development processes.

AI offers a variety of solutions for hiring managers, such as basic hiring tools, intermediate programs, and advanced AI solutions.

Integrated software products and well-thought-out algorithms for responding to users' actions and words allow you to create a "persona" that can effectively interact with job candidates, new employees undergoing adaptation training, and benefits and compensation specialists when calculating salaries and bonuses. HR managers and line managers use these tools to create analytical reports. This provides greater potential, saves time and budget, and provides more accurate information for human resource management. AI effectively automates many back-office functions for reliable HR transactions and service delivery through technologized chatbots [1].

AI is steadily gaining momentum and is becoming an assistant in many work processes. However, AI can dramatically change the approach to hiring personnel by automating and improving various stages of the recruitment process. Let us analyze what AI can do in the human resources industry [3].

The introduction of AI in recruitment allows automating and optimizing certain processes, making them more accurate and efficient. The main advantages of using AI in recruiting include [6]:

− *Increase the speed and volume of candidate searches.* AI helps to search for talented candidates in a large number of sources simultaneously. It can analyze massive amounts of data from professional networks, resumes, social media profiles, and other sources to find the most suitable candidates for job openings.

− *Labor market analysis.* AI is also able to automatically analyze various sources of salary information, which allows you to determine the appropriate salary level for a vacancy, and thus increase the chances of attracting talented employees.

− *Creating automated job postings.* One of the main AI tools for HR professionals is programs that automatically post jobs on various job platforms and websites. They are able to analyze the labor market and help select the most effective keywords that will attract the attention of candidates.

− *Optimization of candidate selection.* AI tools allow you to analyze professional skills, education, experience, and other criteria for selecting candidates. This helps to reduce the human factor and increase objectivity in the

selection of employees.

− *Automated interviews*. Interviewing candidates is a time-consuming process that requires a lot of effort from HR employees. The use of AI allows the first stages of interviews to be conducted automatically using chatbots. They can ask questions, analyze answers, evaluate the candidate's reaction, and determine their compatibility with the vacancy. This approach reduces the time and effort spent on interviews with unsuitable candidates.

− *Predicting the success of candidates*. The use of analytics and machine learning allows you to create models that help predict how successful a candidate can be in a particular position.

Taking into account all of the above, we can conclude that the spread of AI in HR management opens up the following opportunities and benefits for companies [9]:

1) Saving the search for qualified personnel and preventing the loss of intellectual capital as a result of the possible loss of qualified specialists. E.g., automation of training processes allows you to preserve the knowledge and technologies accumulated in the company, preventing their loss as a result of the turnover of specialists who possess this knowledge.

2) Increasing the confidentiality required of people who have access to personal data in the course of performing HR functions.

3) Reduction of time spent by HR personnel on administrative tasks (appointment and monitoring of training courses, payroll, initial selection of candidates, verification of their competencies, etc.), and accordingly significant savings in labor costs;

4) Increasing the accuracy of HR functions by reducing the number and frequency of human errors in administration, recruitment, training, remuneration calculation, etc;

5) Reduction of biasing in personnel decision-making.

The use of AI in human resource management (HR) introduces new requirements for companies and changes the way they perform various HR functions. To maximize the benefits of advanced technologies, HR competencies must be clearly defined, aligned with business requirements, and differentiated by function, role, and level. They should be regularly updated at regular intervals and adapted to fulfill any HR function.

Currently, AI tools can simplify and automate recruitment processes. Here are some of them [8]:

− resume screening (TalentBin by Monster);

− scanning networks to find candidates (Entelo, Hiretual);

− assessing the probability of a candidate's success;

− interaction with candidates through chatbots;

− creating unique job descriptions (Textio).

Technical and technological progress is constantly evolving, and the globalized world facilitates the rapid spread of innovative ideas. Today, it is important to determine the readiness and ability of a business to innovate quickly when implementing AI.

A group of Ukrainian scientists conducted an analytical study at the country's enterprises, assessing the degree of readiness to implement AI systems in management activities (Fig. 2) and the frequency of use of advanced digital technologies (Fig. 3).

Middle and senior managers were selected as respondents, who had to answer the questions of a specially designed questionnaire [10].

Fig. 2 shows that only 24% of respondents indicated that their companies have departments ready to implement innovative technologies. Another 32% identified this as a prospect for the future, and a significant number (44%) noted the absence of such units. Fig. 3 clearly shows that business managers are already using digital technologies, which indicates an understanding of the need to implement AI, although the motivations for their use may vary.
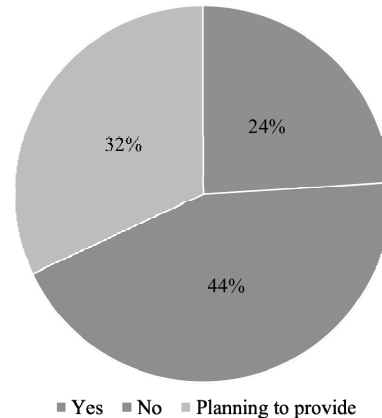

Fig. 2. Results of the survey on the presence of units (departments) responsible for technological innovations at enterprises
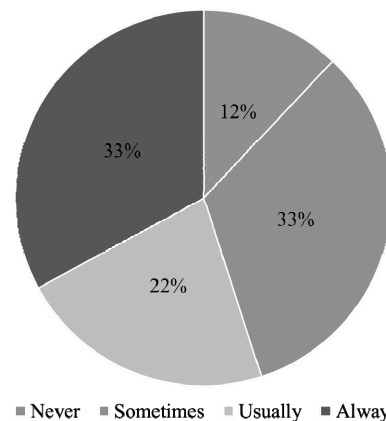

Fig. 3. Frequency of using digital technologies in the practical work of managers

The data shows that Ukraine is not yet sufficiently prepared for the rapid introduction of innovative technologies in full. However, this does not exclude the possibility of development through research, organizational, investment, and other measures.

Some developments in the field of AI already exist and are being implemented, but most researchers believe that the level of development of such technologies is still insufficient.

However, progress cannot be resisted. Despite the threats and concerns, assessing all the disadvantages and advantages, we can confidently state that AI can solve a significant number of problems in human resources management and human development in general.

CONCLUSION

Therefore, to ensure competitiveness, it is important for companies to properly manage the recruitment process, ensure employee motivation and retention for a long period of time without losing productivity. Timely response to employees' needs and understanding of their motivations (desire for career growth, improved working conditions,

etc.) will allow companies to strengthen their positions and maintain a high level of popularity, even during the crisis. Applications that use AI are best suited to solve this problem, simplifying routine tasks of companies, providing a wide range of information for consideration and identifying new opportunities. As AI systems in HR become smarter and more task-focused, we can expect significant improvements in employee productivity, efficiency, and well-being.

It will be difficult for AI to completely replace humans in HR, as a high level of EQ (emotional intelligence quotient) and deep personal contact are the key to working with staff. It can only serve as a tool to support and help HR professionals make the right decisions. After all, it is important to maintain a humanistic approach in communicating with candidates to build mutually beneficial relationships between the company and employees [6].

AI tools are becoming a reliable assistant for HR professionals, enabling them to focus on strategic tasks, ensuring that candidates are selected that best meet the company's needs. This approach improves work efficiency, increases the quality of candidates, and contributes to the development of the enterprise.

References

1. Bey H.V., Sereda H.V. Transformation of hr technologies under the influence of digitalization of business processes. *Economics and management organization.* 2019. № 2. pp. 93-101 (in Ukrainian).

2. Charlwood A., Guenole N. Can HR adapt to the paradoxes of artificial intelligence? *Human Resource Management Journal.* 07 January 2022. URL: https://doi.org/10.1111/1748-8583.12433

3. Chevalier F., Dejoux C. Artificial and human intelligence, what interactions? Artificial Intelligence and Human Resources Management: Business Practices. 2020. No 12. URL: https://bit.ly/3vdutzh

4. Eubanks B. Artificial Intelligence for HR: Use AI to Support and Develop a Successful Workforce. The Great Britain, 2022.

5. Handbook of Research on Artificial Intelligence in Human Resource Management. The Great Britain, 2022.

6. How artificial intelligence (AI) helps HR in their work. The main AI tools for recruiting. Golden Staff. URL: https://www.staff.ua/uk/blog/yak-shtuchnyi-intelekt-shi-dopomahaie-hr-u-v-roboti-osnovni-ai-instrumenty-dlia-rekrutynhu (in Ukrainian).

7. Hurska M. Everyone is talking about artificial intelligence. Let us explain in simple words what it is. *Ukrainian information media platform "Espresso".* 2017. URL: https://espreso.tv/article/2017/11/04/shtuchnyy_intelekt (in Ukrainian).

8. Jaswinder Sekhon Singh. Design and Analysis of Human Resources Using Artificial Intelligence. N.p, 2023.

9. Mashlii H., Mosii O., Pelcher M. Research of managerial aspects of artificial intelligence use. *Galician Economic Herald.* 2019. Vol. 57. No. 2. pp. 80-89. (in Ukrainian).

10. Research of the HR platform Ideal. URL: https://ideal.com/product/diversity-equity-inclusion-intelligence/ (in Ukrainian).

11. Transforming Human Resource Functions with Automation. USA, 2020.

12. Artificial intelligence in HR: how technology helps companies manage personnel. URL: https://www.everest.ua/shtuchnyj-intelekt-v-hr-yak-tehnologiya-dopomagaye-kompaniyamkeruvaty-personalom/ (in Ukrainian).

13. Wheeler, Anthony R., Buckley, M. Ronald. HR Without People? Industrial Evolution in the Age of Automation, AI, and Machine Learning. The Great Britain, 2021.

Список використаних джерел

1. Бей Г.В., Середа Г.В. Трансформація hr-технологій під впливом цифровізації бізнеспроцесів. *Економіка і організація управління.* 2019. №2. С. 93-101 (in Ukrainian)

2. Charlwood A., Guenole N. Can HR adapt to the paradoxes of artificial intelligence? *Human Resource Management Journal.* 07 January 2022. URL: https://doi.org/10.1111/1748-8583.12433

3. Chevalier F., Dejoux C. Artificial and human intelligence, what interactions? Artificial Intelligence and Human Resources Management: Business Practices. 2020. No 12. URL: https://bit.ly/3vdutzh

4. Eubanks B. Artificial Intelligence for HR: Use AI to Support and Develop a Successful Workforce. The Great Britain, 2022.

5. Handbook of Research on Artificial Intelligence in Human Resource Management. The Great Britain: Edward Elgar Publishing, 2022.

6. Як штучний інтелект (ШІ) допомагає HR-у в роботі. Основні AI інструменти для рекрутингу. *Golden Staff.* URL: https://www.staff.ua/uk/blog/yak-shtuchnyi-intelekt-shi-dopomahaie-hr-u-v-roboti-osnovni-ai-instrumenty-dlia-rekrutynhu

7. Гурська М. Всі говорять про штучний інтелект. Простими словами пояснимо, що це. *Українська інформаційна медійна платформа «Еспресо».* 2017. URL: https://espreso.tv/article/2017/11/04/shtuchnyy_intelekt

8. Jaswinder Sekhon Singh. Design and Analysis of Human Resources Using Artificial Intelligence. N.p, 2023.

9. Машлій Г., Мосій О., Пельчер М. Дослідження управлінських аспектів використання штучного інтелекту. *Галицький економічний вісник.* 2019. Т. 57. № 2. С. 80–89.

10. Дослідження HR-платформи Ideal. URL: https://ideal.com/product/diversity-equity-inclusion-intelligence/

11. Transforming Human Resource Functions with Automation. USA, 2020.

12. Штучний інтелект в HR: як технологія допомагає компаніям керувати персоналом. URL: https://www.everest.ua/shtuchnyj-intelekt-v-hr-yak-tehnologiya-dopomagaye-kompaniyamkeruvaty-personalom/

13. Wheeler, Anthony R., Buckley, M. Ronald. HR Without People? Industrial Evolution in the Age of Automation, AI, and Machine Learning. The Great Britain, 2021.

Ірина Олександрівна **ВАЦ**
студентка, Національний авіаційний університет
ORCID: https://orcid.org/0009-0004-0336-2557
e-mail: 6132319@stud.nau.edu.ua

Оксана Миколаївна **КИРИЛЕНКО**
д.е.н., професор, зав. кафедри, Національний авіаційний університет
ORCID: https://orcid.org/0000-0003-2406-7050
e-mail: ons@ua.fm

Валентина Олексіївна **НОВАК**
к.е.н., професор, Національний авіаційний університет
ORCID: https://orcid.org/0000-0001-6899-2016
e-mail: novak.nau@mail.ru

ПЕРЕВАГИ ЗАСТОСУВАННЯ ШТУЧНОГО ІНТЕЛЕКТУ В ОСНОВНИХ HR-ПРОЦЕСАХ

У статті розглянуто застосування штучного інтелекту (ШІ) в основних процесах управління людськими ресурсами. Зазначено, що в умовах сучасності ШІ вважається передовим інструментом, який може оптимізувати управлінські процеси у різних галузях економіки. Обговорено нові можливості, які відкриває ШІ в управлінні персоналом, підвищуючи ефективність дій на всіх рівнях та доповнюючи людські здібності. Основну частину статті присвячено розгляду переваг і потенційних можливостей застосування ШІ на різних етапах циклу життя співробітника в компанії. Зокрема, відзначено оптимізацію рекрутингу за допомогою аналітичного оброблення великих обсягів інформації, а не суб'єктивного судження. Виділено такі області, як операційна ефективність, рекрутмент, онбординг, управління талантами, стратегічне планування, кар'єрне зростання та управлінські зміни, де ШІ може зробити значний внесок. У статті також висвітлено питання, пов'язані з потенційними небезпеками впровадження технологій ШІ. Вказано на рівень готовності та ступінь залученості менеджерів до новітніх технологій в управлінні людськими ресурсами. Поставлено питання ефективності та розв'язання різних проблем. Крім того, наведено приклади реальних програмних продуктів. У висновках підкреслено загальну перспективу застосування ШІ в HR-процесах та визначаються напрями подальших досліджень. Зокрема, подано заклик до розроблення механізмів захисту працівників від можливого зловживання ШІ та вироблення ефективних стратегій впровадження технологій, які б враховували етичні аспекти. У заключній частині поставлено завдання бізнес-спільнотам та законодавчих органів активно працювати над стандартами застосування ШІ в HR для створення справедливого та ефективного управління персоналом.

Ключові слова: *управління людськими ресурсами, штучний інтелект, ефективність, рекрутмент, адаптація, навчання, мотивація, новітні технології, переваги, автоматизація, чат-бот*