

# DIGITALISATION OF HUMAN RESOURCES MANAGEMENT: A NEW REALITY IN THE CURRENT ENVIRONMENT

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## Abstract

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Society's transition to a digital economy requires new approaches to business management. At present, traditional approaches and technologies of people management are undergoing a significant transformation. This article examines the processes of digitalisation of human resource management in leading international companies and studies the peculiarities of management, taking into account the application of modern high-tech tools. The purpose of this study is to analyse the practice of digital technologies' application in the system of human resources management. It analyses the application of digital technologies at all stages of human resource management: planning, recruitment, selection, adaptation, training, evaluation, and career management. Nowadays, digital technologies are an integral element of the management mechanism of a modern organisation, and one of the key tools for gaining competitive advantage. Rational implementation of tools in the human resource management system provides an opportunity to meet the company's need for employees who possess the necessary knowledge and skills. Subsequently, it is these employees who provide the company with a sustainable competitive advantage in the market.

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## Keywords

Digitalisation, human resource management, automation, intelligent human resource management, digital technologies, digital adaptation of personnel, machine learning, virtual and augmented reality, international companies.



## INTRODUCTION

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The rapid development of information technology is forcing businesses to adapt to new realities that are underpinned by the advances of Industry 4.0. Companies from different sectors, from small businesses to multinational corporations, are adopting digital technologies.

The digitalisation of business has affected all areas of company operations, including HR management. Large multinational companies regularly introduce modern tools into the mechanism of employee development, as human capital is one of the key assets of any firm, and competitive knowledge and skills guarantee further business growth and an increase in competitiveness. Nowadays, the use of digital technologies is becoming widespread in the system of people management, from personnel planning processes to subsequent assessment and career management, allowing companies to optimise and control activities in more detail.

Russian companies, especially in the IT, banking and finance sectors, are actively implementing advanced technologies in the field of digitalisation of HR management. Practice shows that the budget of companies with more than 100,000 employees allows them to purchase expensive high-tech IT products, and the business development strategy dictates the need for digitalisation of HR management processes. Large companies such as Yandex, Ozon, and HeadHunter already effectively utilize the best foreign experience. Therefore, studying and analysing the modern practices of leading international companies is highly relevant for managers and their HR departments.

## MODERN METHODS OF PERSONNEL MANAGEMENT

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Personnel management in modern conditions is already based on an updated business strategy realised with the help of IT-technologies. Traditional management methods, such as the formation of a planned staff for certain tasks, are transformed into talent management, training, and competence development within the framework of the new human resource management strategy. In this regard, businesses are endowing their employees with new goals, tasks, and roles in the management system, thereby expanding their ability to create a more flexible and efficient organisational structure.

Let's take a closer look at modern digital tools used by leading international companies in forming a modern HR management system.

In recent years, the planning of an organisation's workforce has been based on thorough database analytics, which is part of the overall HR management system. To implement the planning function, analytical programs are used, the purpose of which is to create an algorithm for identifying the necessary knowledge and skills of human resources. This will further make it possible to forecast the company's demand for personnel, as well as to balance the needs of the organisation in accordance with the identified demand. This analytics, combined with machine learning, allows companies to conduct more thorough recruitment and selection of employees. The use of such technology in analysing the skills and competencies of an organisation's workforce enables the specification of employee characteristics that contribute to a company's performance. In addition, such data can become the basis for improving the personnel development system, including adaptation and performance management.

The most comprehensive and interesting workforce planning system is offered by Deloitte. Deloitte's solution includes proprietary analytics combined with a platform built on Anaplan technology, which has the advantage of

enabling lightning-fast implementation and scalability of the system and its functions within an organisation's workforce planning framework. This system includes the following key elements: federated analytics and workforce planning, flexible data editing, and consolidated reporting. Deloitte and Anaplan's common engine is based on advanced analytics data and interfaces with various back-end systems from workforce management to financial schemes, using computational computing to update and analyse information on a regular basis.

The application of digital technologies in labour recruitment and selection systems has been developing rapidly over the last few years. One of the main trends is the interaction between candidates and organisations through platforms designed for collaborative sourcing and the possible exchange of information between stakeholders. The largest international platform in this area is LinkedIn, which was originally planned as a platform for the exchange of professional contacts for the purpose of realising projects between companies. The competitive advantage of this platform is that it is organised on the model of a social network, which simplifies its use. Less complex but more widespread platforms are electronic labour exchanges that consist of posted vacancies and offers, as well as a search engine with the possibility of applying filters. Some of the most popular electronic job exchanges are ZipRecruiter, Indeed, Glassdoor, and CareerBuilder.

For example, the American trading company Amazon electronic labour exchanges to post current vacancies and search for potential candidates. The company interacts with such exchanges as LinkedIn and Glassdoor, and also uses its own platform, which allows it to find staff interested in working at Amazon.

In today's environment, many companies have begun to move to an artificial intelligence (AI)-based applicant tracking system that integrates recruitment and selection functions. This mechanism is based on an inbuilt algorithm of criteria, including keywords, knowledge and experience requirements, skills, and qualifications of potential employees, which allows AI to filter out unsuitable candidates, thus freeing up HR staff time for more meaningful tasks. In addition to filtering out unsuitable candidates, the system's functions also include posting the organisation's job listings on several professional platforms, screening candidates for suitability before an interview, and scheduling interviews. It should also be noted that the introduction of this tool into the mechanism of the recruitment system helps to minimise bias towards gender, age, and ethnicity of candidates by providing the opportunity to select candidates based on knowledge, competencies, and qualifications.

Currently, five leading companies can be identified as providing the best quality artificial intelligence-enabled recruitment/selection product: Greenhouse, Pinpoint, VidCruiter, JazzHR and Recrutee. For example, a multi-channel communications platform that offers solutions for Uber, Adobe, and MessageBird uses Greenhouse's AI-powered labour recruitment system. IBM has also developed an interesting solution with its Watson technology, an artificial intelligence that includes a set of services and applications used not only in the field of human resources management but also in many other business processes. As part of the employee management system, this technology is employed to to evaluate and improve the efficiency of recruitment and selection of personnel, helping to reduce possible errors in the search for candidates.

Having gone through the workforce planning and recruitment stages, the organisation moves on to reviewing and selecting potential candidates. As part of the widespread digitalisation of the previous stages of workforce development, selection is the first stage at which the prospective employee begins interacting with HR representatives. Leading companies are also

adopting digital technologies to improve and optimise this process. One of the most common recent practices is interviewing candidates via video applications and platforms such as Skype, Zoom, or Microsoft Teams. This subsystem of human resource management is also significantly simplified by artificial intelligence mechanisms, which performs fine-grained filtering of suitable personnel and can even schedule an interview on its own.

This tool is used not only for processing of unified databases; companies also use virtual interviewers for personnel selection, so-called chatbots. They are designed to interpret the speech spoken or sent by candidates and to form and send suitable answers. Moreover, virtual interviewers fulfil a number of other functions that save time for HR staff. These can include scheduling interviews and collecting automated initial screening responses. This list also includes providing responses from candidates visiting special job pages and answering questions from candidates already being considered about the status of their application, as well as possible bonuses and benefits in the company. Another function of the chatbot based on artificial intelligence technology is the selection of candidates through text messages, which are used in presentations and job fairs held online.

The virtual interlocutor works around the clock, allowing candidates to ask questions and submit can monitor the artificial intelligence, make adjustments, and contact a potential candidate during their working schedule. There are four most convenient virtual interlocutors used by international companies around the world: Olivia, Humanly, Symphony Talent, and Wade and Wendy. The last virtual interlocutor from this list has a number of advantages. First and foremost is the complete automation of the selection process. Wade and Wendy interacts with candidates around the clock, selects from the submitted CVs, and further generates preliminary information for HR representatives who make the final decision. Due to its wide range of functionalities, this virtual interlocutor is particularly popular.

Digital technologies are also actively used in the organisation of personnel development systems: adaptation, training, assessment, and career management. Modern technologies used to help clients learn new programmes have transformed into tools for adapting employees in the workplace. Digital onboarding is the use of computer technologies and tools to integrate new employees into business processes. These technologies make it possible to develop a more cost-effective system that includes easy-to-understand instructions and checklists for newly hired employees. This system provides round-the-clock access to any information, which helps to understand the overall operations of the firm as well as individual work processes.

It is also worth noting that digital onboarding helps to shape and provide employees with a personalised onboarding experience within the organisation. This tool requires less company resources compared to traditional adaptation methods, as it eliminates the need to print working documentation and involve mentors. The use of such technologies improves employee engagement by incorporating videos, interactive games, and tasks into the software, as well as personalised content designed to teach the employee specific job skills.

An important feature of digital adaptation is the completion of the adaptation programme in an individual mode. The new employee is able to receive and study the required materials on his/her own, without the need for a mentor. The use of digital tools in the adaptation process of new employees contributes not only to their training but also to the creation of individual programmes of activities. The most popular technologies used in digital onboarding are Whatfix, Eduflow, Bamboo HR, Click Boarding, and Microsoft Teams. Microsoft Teams technology offers the most comprehensive set of features as it is integrated with other Microsoft products. However, it is not always combined with other digital systems used by companies. This problem

is effectively addressed by the Whatfix service, which embeds itself into existing digital streams and applications, while explaining how to use them through a “guided tour” mechanism. The advantages of this service also include the ability to monitor the speed of tasks performed by employees undergoing adaptation and to provide assistance.

For example, the introduction of artificial intelligence technology ADAPT in Amazon has allowed the company to reduce the adaptation time of staff from 180 to 45 days and promptly provide them with the required support and counselling. The latter is done with the help of a digital assistant that works on the basis of artificial intelligence to generate the required information. The technology guides the employee through all stages of the onboarding process and assigns tasks based on their position and pace of training.

Another technology that saves time is automation. Today’s automation process covers everything from automated emails to orientation onboarding.

Employee skills training plays a key role in an organisation’s success and further development. Trained personnel with the necessary knowledge and skills can fulfil the tasks within their job positions more effectively. Therefore, to improve the competitiveness of both human resources and the company as a whole, staff training programmes are being developed using digital tools. These include e-learning courses, on-the-job training based on digital platforms, simulation-based training, and video training. As for training types such as coaching and mentoring, only electronic communication tools are added to these processes, which do not significantly affect the development programme itself but only digitise it.

The following types of software training are currently in use: corporate learning management systems, digital learning platforms, knowledge base management systems, and video training programmes. The key capabilities of these technologies include designing and implementing online courses using audiovisual tools, providing personalised learning, introducing game elements, tracking user progress, providing analytics to track learning outcomes, and creating self-learning information centres.

Corporate learning management systems are designed to provide tools for the educational process of the organisation’s employees based on the development of individual programmes. This type of software includes the organisation and management of events, as well as the scaling of courses to be delivered across different business units or at an organisation-wide level. E-learning courses designed for employee training are delivered within a specific platform, enabling staff working remotely to be trained according to their individual needs and the requirements of their position.

E-learning courses utilise interactive games, quizzes, and special workshops. The advantage of this type of training is the possibility of using personal mobile devices, which allows learners to determine their own time frame for mastering the material. This technology results in motivated and trained employees and also helps to reduce costs, as the entire training process is fully automated and does not require mandatory presence at the workplace.

A digital learning platform is software that provides mechanisms for creating and developing interactive content in corporate applications, from step-by-step user guides that can be interacted with directly to adaptation programmes and the company’s core databases. Such platforms provide an opportunity for continuous learning and further development of an employee’s competences.

In turn, a knowledge management system is a simpler technology than the other types of software presented above, acting as a digital framework for finding answers to questions related to the organisation, from business processes to management policies. These software tools form a body of knowledge that builds employee awareness of the company and helps to save



time for the organisation's HR department.

Another effective technology is video training software, which is increasingly being incorporated into learning management systems. Its main characteristic is the creation of video content to adapt and train the workforce. Video training engages the workforce in the learning process and provides information in a convenient and understandable format. The advantage of this approach is its cost-effectiveness, as the necessary costs for content creation are one-time.

The simulation-based training method works on the basis of the digital platforms discussed above. It involves employees exploring different scenarios and practical tasks to enhance the knowledge and skills required within job responsibilities. In the context of simulation-based training, augmented and virtual reality technologies are increasingly being used to approach practical cases more accurately and add realism to the scenarios analysed. The advantages of this approach include the development of critical thinking in stressful situations and the realisation of consequences when developing different scenarios. The main disadvantage of the methodology is the high cost of its implementation due to the need to use expensive devices and programmes.

For example, the telecommunications company AT&T offers its employees training programmes in the format of online courses developed in collaboration with the Udacity platform, which implies independent mastering of the material. In partnership with Georgia Tech University, the company offers a course that allows participants to obtain a master's degree in computer science online.

In turn, the American IT company SAS has developed a digital learning platform called SAS Academics, which provides technical and sales professionals with various on-the-job training programmes. Through these staff development courses, employees gain additional knowledge in areas ranging from customer counselling to marketing.

Amazon's 2025 Skills Development Programme, for which the company has allocated \$1.2 billion, currently includes ten elaborate courses: Career Choice, Surge2IT, Amazon Technical Academy, Machine Learning University, Mechatronics and Robotics Apprenticeship, Amazon Apprenticeship, and Amazon Web Service Training and Certification, AWS Grow Our Own Talent, AWS Intelligence Initiative, User Experience Design and Research Apprenticeship. These programmes aim to train employees in digital technologies covering cloud systems and artificial intelligence, empowering them to secure better job opportunities both internally and externally. The training system is powered by the Amazon Web Services digital marketplace, which includes most of the modern tools.

Thanks to state-of-the-art technology for combining disparate data, the corporate learning management system and digital learning platform closely monitor the progress of development programmes throughout the entire training process and provide feedback both to employees as well as their managers and HR departments. Assessment is based on the results of courses, quizzes, simulations, and tests. The acquired knowledge and skills, as well as the existing competences, can be used to compare the employees of the organisation with each other or with potential candidates undergoing the selection process. This procedure is performed with the help of artificial intelligence.

The Watson system developed by IBM is an example of a digital system that encompasses all aspects of HR work, from recruitment planning to evaluation. The artificial intelligence independently analyses the data received about employees and provides the HR department with detailed information about the results of the training programme.

As part of this system, IBM has also developed a technology responsible for career management: Watson Career Coach. It is a virtual assistant that aligns the organisation's goals with the career goals of employees. The system collects and analyses data on employees' achievements, preferences, and interests, and makes recommendations on internal vacancies and career development opportunities. In addition, it can analyse training results and current competences, enabling HR departments to form suitable recommendations.

Thus, digital technologies are actively used in all elements of the human resources development and training system. They contribute to the formation of new skills and knowledge among employees, providing the business with highly qualified personnel, which becomes its competitive advantage.

The implementation of this system results in significant cost savings for the company. At the same time, it is not the labour process itself that is of particular importance, but its result, which leads to significant changes in labour relations. As part of this approach, the management of most international companies is gradually abandoning the command-and-control model (the vertical hierarchy of manager-employee interaction) in favour of horizontal communications, which greatly simplifies the exchange of knowledge and information between management levels through collaboration, cooperation, and partnership.

The rapid development of digital technologies has a significant impact on the labour market. As a result of the current changes in the business environment, there is a noticeable reduction in the number of office staff, which may lead to unemployment. However, on the other hand, new professions are emerging, and there is an increasing need for digital competences in almost all sectors.

In today's environment, businesses are not limited to a workforce located in close proximity to the company's core business. Today, employees can be tens or even thousands of kilometres away from the office and still do their jobs effectively. Many companies are moving their employees to remote work. The entire HR management system is changing, as the process of hiring, training, and evaluating employees is completely moving to an online format. Thanks to the development of modern technologies, the process of selecting candidates for face-to-face interviews and their subsequent hiring now takes a few minutes. Adaptation, training, and development of employees' professional skills no longer require the personal presence of a specialist. To assess employee performance, it is enough to fill in special forms; the system will register the answers, analyse the data and provide the results without the intervention of the human resource management department.

## CONCLUSION

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Personnel management is an independently functioning system with its own principles, functions, and powers. At the same time, it includes workforce planning, recruitment and selection, training and adaptation, development of motivation systems, and evaluation of labour resources. All these processes are undergoing changes in the changing digital economy and digitalisation of business.

Today, digital technologies have become vital to the functioning of companies of all sizes and industries. Correct use of digital tools contributes to the improvement of a company's performance, while failure to use them can lead to a decrease in competitiveness in the market.

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