# Digital technologies in HR management

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**Abstract.** The features of the using of digital technologies in HR management have been considered in the article. A comparison of the most popular HR-employee collaboration platforms in the workflows has been compared. The analysis of the interface and the possibility of using the platform from Hurma Systems in the HR management system have been conducted, its advantages have been determined.

**Key words.** Digital technologies, HR management, HR platforms, Hurrma System.

The first decade of the XXI century. was marked by the entry of the world into a new technological era characterized by the blurring of the boundaries between physical, biological and digital technologies. In these new realities, digital technologies are at the core of the post-industrial innovation economy. The whole range of high technology in question includes artificial intelligence, unmanned transportation, 3D printing, nanotechnology, biotechnology and more.

The development of new technologies, especially digital, is accompanied by systemic changes in all spheres of business, society and politics, as well as the emergence of more modern forms of organization of work of the government, public and private sectors of the economy, which guarantee transparency of the public environment. In fact, there is a rapid birth of a new generation of economy, dubbed the "digital economy" and based mainly on the introduction and use of digital technology in all areas of economic activity.

However, despite the fact that the term "digital economy" today is firmly

entrenched in our lives and is widely used in the scientific literature, programs and various documents developed by both the state and business.

In recent years, the processes of digitalization have been deployed in Ukraine. However, our country is lagging behind the leaders of the digital economy by many indicators: the level of the digitalization share of the digital economy in GDP, the level of capitalization of digital companies, the growth rate of labor productivity, the average delay in the development of technologies used in the leading countries, and more.

Restraining factors for lagging countries are: low level of technology development and underdeveloped digital infrastructure, which is explained by inefficient use of factors of production, lack of human resources (imperfection of the system of training of research, engineering and technical capabilities, competitiveness of products), low competitiveness of products and IT specialists.

In terms of economic security, it is fundamentally important for Ukraine to keep up with developed countries and accelerate the adoption of digital technologies. This issue is especially relevant for the real sector of the economy, the competitiveness of manufactured products and the position of the country in the world high-tech markets, which form the preconditions for sustainable development, will depend on the level of permanent development.

Many scientists have been engaged in concepts of spreading of dietalization in different spheres of activity: K.O. Kuprin and D.L. Khazanov, K. Lapina-Kratasyuk, O.V. Khalapsis, T. Onore, J.-P. de Clerk, G. Tard, F. Bass, F. Ratzel, L. Frobenius, E. Rogers, D. Hawkins, I.O. Zolotaryov and others.

The experience of implementing such technologies in the process of human resources management in an enterprise is up-to-date. According to the results of research of international consulting companies that conduct research on changes in the labor market (Deloitte, E&Y, KPMG, Harvey Nash), the introduction of digitalization in the personnel management system in enterprises is of particular importance and relevance. Every year more and more companies are automating the HR function, thus simplifying and making the recruiters and HR managers more efficient.

Today, the HR center has shifted towards building the organization of the future. Companies hire young, experienced digital employees to do things on their own and share information in a transparent way. They want to have an integrated digital experience designed for teams, efficiency and empowerment, and HR is expected to deliver.

To confirm the relevance and necessity of implementing digital technologies in HR management procedures, we present the results of a survey conducted by the leader of on-line resources for job search and recruitment, HeadHunter [1]: out of 310 representatives of companies engaged in HR, the structure of using of Digital tools in their work has been formed (Fig. 3.2). The need forms the proposal: business digitalization has led to the emergence of a new cluster of product development and digital management services.
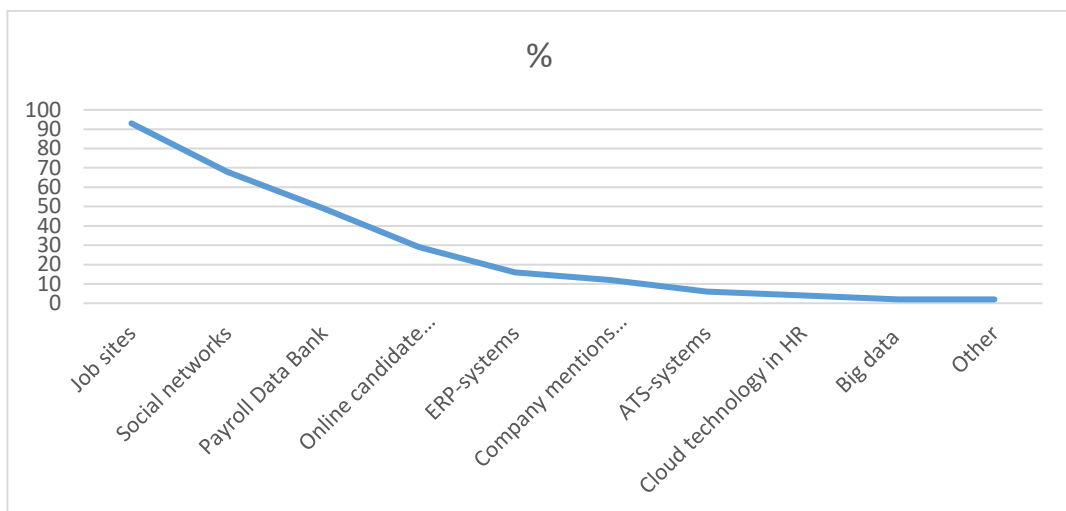


**Fig. 1.** Results of a survey of the leader of on-line resources for job search and recruitment of HeadHunter [1].

As research has shown, nine out of ten companies have automated their HR processes in one way or another. In particular, due to such automation, in almost half of the cases, personnel accounting and personnel administration were optimized, a third of companies simplified internal communications and a quarter began to recruit more effectively. One in seven companies use computer and internet technology to get more accurate HR analytics. And almost as many have the ability to evaluate and

train staff more effectively (including remotely), enabling them to reach the maximum number of employees and minimize costs on the part of the employer [1].

According to the research, the main advantages of using digital technologies are: accuracy and availability of data (42% of respondents), ability to connect different business processes (39%) and manage remote employees (35%), as well as synchronize HR work - departments with other business units (28%).
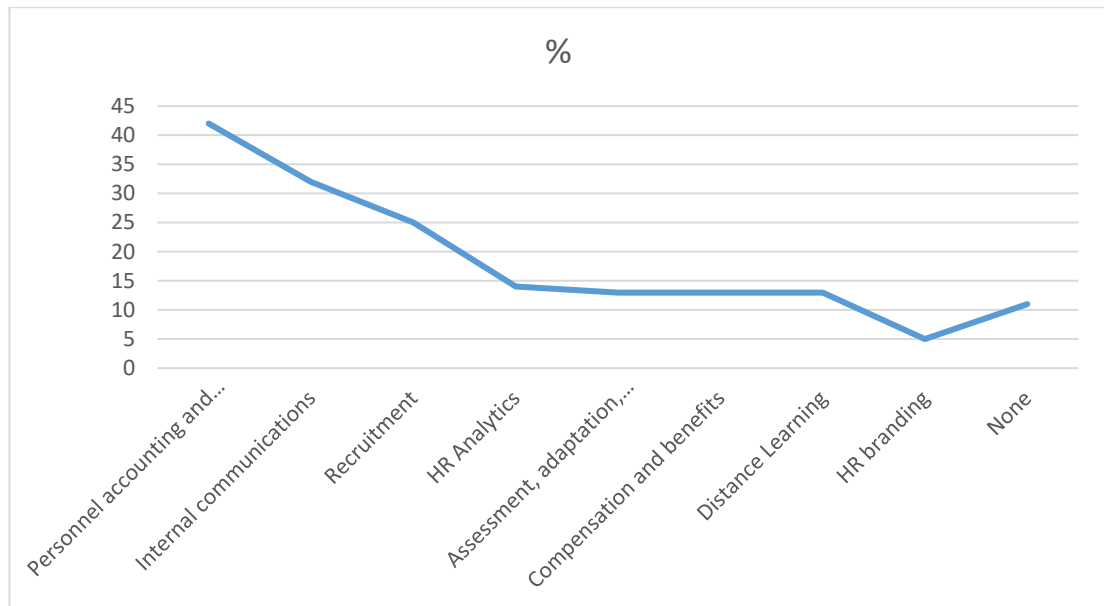


**Fig. 2.** HR - processes that are automated in Ukrainian companies

Among a suite of digital tools, companies most often use PocketPCs, social networks and online tools to evaluate candidates. To a lesser extent, cloud technologies, social media and media mentoring systems, ERP and ATS systems, as well as Big Data are involved. Most often, HRs use Desktop versions of resources, but mobile versions are becoming more widely available [1].

Thus, according to the results of the study, it is possible to conclude that the use of digital technologies in the process of human resources management is effective, namely: it allows to organize a convenient digital environment for staff. For example, personnel adaptation processes can be automated with artificial intelligence. A chatbot can answer questions, familiarize newcomers with the organization's internal documents, provide the necessary information and resources for a comfortable entry [2]. Also, the artificial intelligence system is able to study and analyze the skills, behaviors and actions of the most effective employees, and

build educational trajectories for staff based on this data [2]. The introduction of virtual and augmented reality into the staff training process can take the quality of training to a new level, and make the process interactive and engaging. This technology allows you to simulate real-world situations in the virtual space, with the help of which the complete immersion of staff in a training environment in which they have the opportunity to practice their skills. Cloud technologies allow to upload information to a virtual space that is accessible to each employee. In this way, for example, you can organize staff training in the form of an online platform containing a catalog of courses and reflecting the success of each employee. Based on the blockchain, it is possible to create a service that contains resumes, certificates, diplomas and professional achievements of applicants, which will help to reduce the time spent by HR professionals to find suitable candidates and check the accuracy of information about them.

The introduction of digital technologies in HR management will help streamline the purposeful activities of the HR department and company management, use available archival documentation from time to time, but constantly, in daily work, find necessary information in one click, reduce the time traditionally used on reporting.

The phased implementation of personnel management and process automation will allow optimization of all mechanisms, from the development strategy to the long-term prospects. The preparatory stages include [3]:

1. The process of selecting a specific program or entire platform that allows to fully automate the entire management system. It is necessary to consider what process will be automated, whether it is necessary to integrate the whole program with existing applications. It takes one month.

2. Collaboration with the provider. At this point, you should choose a provider who will design and implement the entire system or adapt an already finished product with new or existing applications. You should rely on selection criteria such as a user-friendly interface and accessibility for all employees. The process takes about two months.

3. Software development, implementation and customization. At this point, the HR manager oversees a process that takes about one year.

4. Training of HR managers takes place at the provider's company. An equally popular option is the invitation of a specialist from the provider. In the course of work, all staff members are trained.

5. Transformation of materials for inclusion in the system. All documents should contain up-to-date information necessary for daily work, reporting and other tasks.

Here are examples of the most popular HR-platforms of interaction between employees in the framework of work processes at the domestic market (Table 1) [4].

**Table 1.** Comparison of the most popular HR-employee collaboration platforms across workflows

| Parametrs | ZOHO | BAMBOOHR | WORKEBLE | HURMA |
|---|---|---|---|---|
| Price per year in the company up to 100 people | $6780 | $10470 | $8000 | $1620 |
| Price pe rmonth in the company up to 100 people | $565 | $895 | $450 | $150 |
| Free trial period | yes | yes | yes | yes |
| Technical support | 24/5 | 12/5 | 24/7 | 24/7 |
| Integration with Google Calendar | yes | no | yes | yes |
| Analytics | yes | yes | yes | yes |
| Automatic vacation and hospital leave calculation | yes | yes | Integration through extra plugin | yes |
| Integration with messengers | SMS integration | Plugin integration | no | yes |
| Performance review | yes | no | no | yes |
| Objective and Key Result Modul | no | no | no | yes |
| Employee mood monitoring | no | no | no | yes |
| Integration with job sites | through Zoho Recruit | yes | yes | yes |
| Integration with Linkedin | through Zoho Recruit | no | yes | yes |
| Employee development management | no | no | no | yes |
| Mobile applications | yes | yes | yes | yes |
| Parsing CV | no | no | yes | yes |

| Interface languages | English German French Portuguese Spanish | English | English | English Ukrainian Russian |
|---|---|---|---|---|

According to the results of the analysis, the implementation of the Hurma System platform in terms of its accessibility in comparison with other platforms, as well as its wide functionality is the most expedient.

Let`s consider in more detail the functionality of HURMA Systems which has the following sections [5]:

1. Core HR:

welcome interview automation, Adaptation, Probation, 1: 1, Exit interview;

organizational structure of the company;

notification of company events;

sync with Google Calendar;

statistics on the children of employees;

HR and recruiting statistics;

automation of onboarding and adaptation - mailing of follow-ups and letters, checks;

payroll calculation - accounting of the salary, tracking of the date of start of work (probation), the history of reviewing the salary, forks of the salary or comparatio to the market salary;

merit increase / performance-based pay - planning of the review of the salary by the company, budgeting, bonuses;

management of employee development - fixing skills and competencies, tracking the level of development and grade of employees;

succession planning - the ability to assign accessories for employees, planning the career development of an employee;

exit management - sending questionnaires, check lists.

2. Self management:

a general calendar of vacations, sick leave, self-reviews and other absences

for all employees;

automation of approval requests and vacation calculations;

employee request 1: 1 and feedback;

personal office of each employee of the company;

each employee's personal card;

absence management ;

addition of functionality;

performance management.

3. Performance review:

OKR− Objectives and Key Results, goals and key results, cascade of goals;

the ability to synchronize to goals, to regularly track the progress of the goal, twrite comments on goals during 1: 1

assessment of 360 on the given competences;

box matrix (potential / performance).

4. ATS:

posting vacancies on the company's website;

candidate recruitment base;

base of company vacancies;

import of candidates from other systems (Clever);

parsing CVs from different file types;

the status of the candidates who are in the job;

integration with work portals;

automatic follow-ups via e-mail and other communications;

organization of access for HR, recruiters, managers;

linkedin link (ability to comment on Linkedin profiles).

5. Gamification:
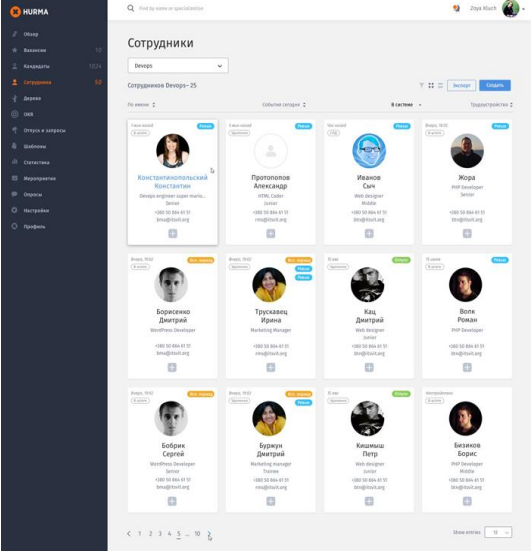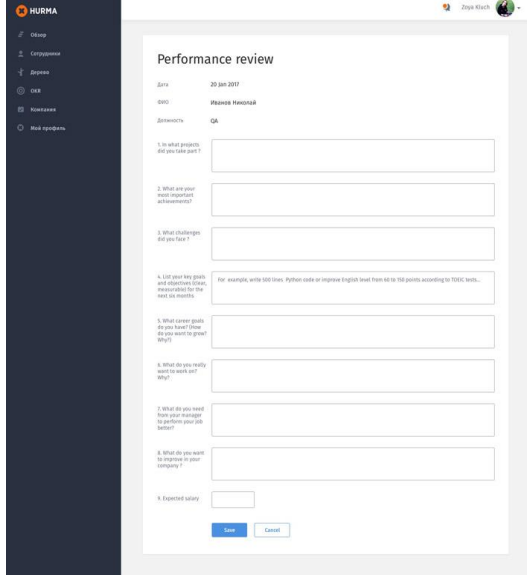
employee mood monitoring;

peer2peer recognition− take five and other implementation options;

continuous feedback - regular questionnaires, employee and team reports.

Let`s consider the interface of a comprehensive HRM system from Hurma Systems (Table 2) [4].
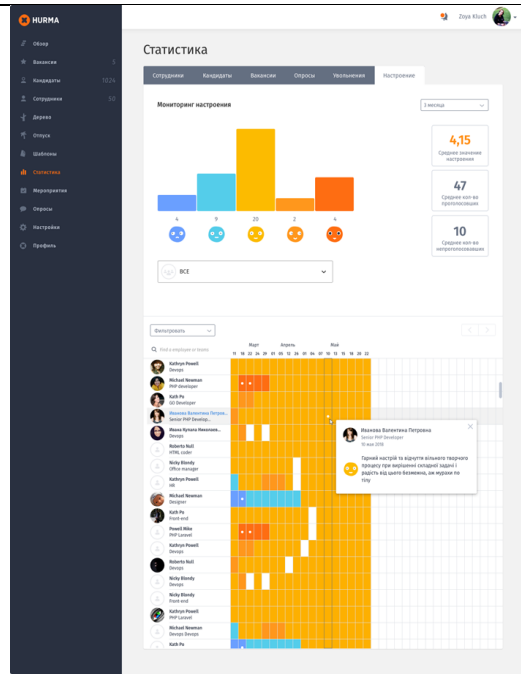
**Table 2.** Features of the integrated HRM system - Hurma Systems

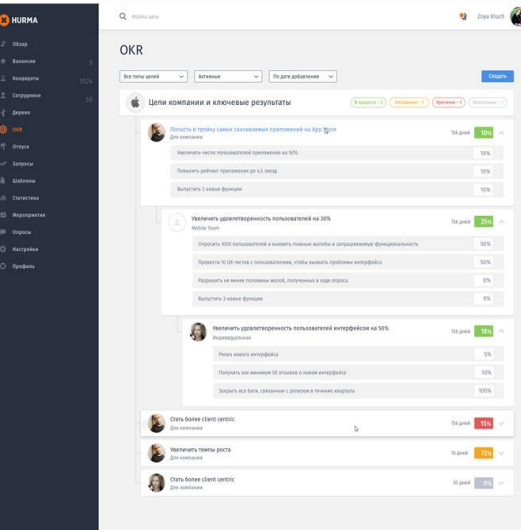| Structural element | Features | Screenshot of the platform |
|---|---|---|
| Employee profiles | The profile of each employee in the system contains key information about him - contacts, number of days worked and sick days, accrued on days of leave, etc. All profiles are organized with a convenient list where you can quickly find any employee. In addition, you can sort employees by several filters, find the right ones, check the status of employees (who is on vacation, who is on probation, etc.). |  |
| Performance review | important functionality for evaluating employee performance and finding ways to improve it. The Hurma system allows you to create convenient questionnaire templates for such meetings, schedule them, and keep records of all meetings that have been completed so you can check the employee's progress at any time. |  |

| Mood monitoring | Each employee at the entrance can choose one of the levels and, if something is dissatisfied - immediately indicate the reason. This is convenient for companies with hundreds of employees, where HR managers physically do not have the opportunity to bypass everyone in a day and wonder how anyone is doing. Employee sentiment monitoring helps to keep your heart on the situation in the company and respond quickly to problems that reduce employee productivity. |  |
|---|---|---|
| Working with a hierarchy of goals on the OKR OR system (Objectives and Key Results) | OKR helps to create a hierarchy of goals from the highest level - throughout the company - to the goals of each team and each individual employee. The hierarchy is open so that each employee sees what each employee is doing and how each contributor influences the company.<br><br>The effectiveness of each goal is measured by several key outcomes. This allows a comprehensive approach to solving each problem. 50% of goals are assigned by top management, 50% - offered by employees from below, which increases team engagement and motivation. Ways to achieve each goal are not regulated, |  |

| | which allows the employee to show creativity and competence in choosing how to solve the tasks. Goals should be ambitious and rigid but not cosmic, otherwise the sense and motivation of trying to reach them will be lost. | |
|---|---|---|

In addition, the Hurma System allows you to automate the calculation, accrual and approval of vacations, accounting for hospital and business trips, requests for work from home, tracking the process of adaptation of employees, mentoring and internal training, anniversaries of important events in the life of the employee and their families and more.

You can create one-time and recurring events (rallies, Performance review, 1: 1 meetings, various types of interviews) with email reminders to attendees. Integration with job sites and LinkedIn is underway to publish job openings in 1 click; Already available import of CVs of candidates from different formats and CleverStaff system, refined upon customer request and other system functionality.

Thus, the introduction of digital tools in the personnel management system is the key to successful business operations in a modern information environment. This will make the process of managing people at the enterprise more transparent, motivating, aimed at achieving specific goals that take into account both the interests of each individual employee and the overall strategy of the enterprise.

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