

Formation of Innovative Model of Personnel Management on the Basis of Digitalization in the COVID-19 Pandemic

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Abstract

The article explores megatrends in management, related to the transition to digital technologies in all spheres of the economy and production in the COVID-19 pandemic. The main contribution to the analysis of the current state of digitalization HR in business. The possibilities of a set of processes and methods of interaction with information in the formation of a strategy of people's management, are investigated. This is achieved through the use of integrated mobile applications and the automation of HR processes. From the results, the methodology for determining the severity of competences, indicators of behavior are proposed, the strengths and weaknesses of the company's staff management system in the COVID-19 conditions are taken into account. The practical usability of work is due to the proposed competency-based approach, which makes it possible to increase the efficiency of personnel selection, taking into account key macro-competencies that find an applied form through appropriate behavioral indicators.

Keywords

Management; COVID-19 pandemic; HR; Digitalization; Staff Management.

Introduction

Problems of managing people remotely during in the COVID-19 global pandemic create the reality of additional actualization of the need for every business for using of digital processes in HR management (Azizi et al., 2021). That's why, there is a need to study the best practices in management, as it is already a question of survival in new conditions ((Risley, 2020; Sikora & Ferris, 2014; Cooke et al., 2020a).

Modern realities of business functioning encourage companies to move a fundamentally new level of management and organization of business processes. Globalization processes in society, cross-sectoral integration, client orientation, resource-oriented development of digital technologies in recent decades have led to a change in the outlook for the positioning of modern enterprises in the business environment. Creativity,

interaction, accessibility, simplicity and flexibility become priority principles of their functioning (Caligiuri et al., 2020; Hamza Shuja et al., 2020). In a period when digitalization affects all the branches of our life, the management sector is not an exception. The latest technologies are developed almost daily (Claus, 2019; Boiko et al., 2021a). All agro-information is gradually digitized and analyzed. The development of digitalization in managing the development of staff potential among modern enterprises requires the application of the experience of countries, focused on business optimization, effective IT solutions, and quality assurance of staff. The latest ideas, initiatives and programs should be integrated into the strategy of the company and increase the innovative attractiveness of the business (Su et al., 2021; Vedernikov et al., 2020a). The main directions of the development of management systems in the COVID-19 pandemic and digitalization of management should be: promoting the acceleration of innovative initiatives, prognostic monitoring of the market environment, assessment of factors affecting the competitiveness of the company, development of road maps, based on industry priorities and customer experience. At the same time, the formation of staff potential, complex synchronization of all activities, development of culture and competencies of

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information exchange, modernization of IT systems should take place (Kraus et al., 2022; Mitrofanova et al., 2021), application of analytics and Big Data. The development of staff potential of enterprises in the agricultural sector will take place most effectively if all its components are simultaneously mastered. In view of this, the issues of finding and selecting the most effective resources, tools and technologies for the development of enterprises are updated.

Modern society is on the verge of major transformations and deep transformation processes in the digital sphere. The active development of digital and information technologies has formed a qualitatively new market – the market of information services, which unites a large segment of consumers. Individuals, employees, business representatives operating in this market are aimed at optimizing business processes, improving the productivity of companies, improving the experience of market interaction, based on the constant use of large volumes of relevant information. In the new digital economy, there is a change in requests and forms of consumption. The main feature of digitalization is the creation of means for more comfortable and operational interaction between business and consumers in the COVID-19 pandemic. The impact of digitalization and digital technologies on business processes and business models is generally considered by many scientists (Cooke et al., 2020). Various aspects of this problem are investigated by well-known economists-practitioners and scientists, among which significant contributions were made.

In previous research (Boiko et al., 2021b; Vedernikov et al., 2020b) the authors found out the principles of automation of HR processes and the use of mobile applications in the work of HR managers. Such studies suggested a harmonious combination of cloud technologies, social networks, mobile applications, virtual reality, artificial intelligence, however, this approach is incomplete taking into account the peculiarities of the COVID-19 pandemic.

Due to the importance of forming a new model of business functioning in conditions of the COVID-19, in particular, professional training, today special attention is paid to HR-digitalization of enterprise staff management processes. After all, human resource management is the most dynamic subsystem of the enterprise, and qualitative rethinking of methods and technologies of staff management entails a significant impact on the result of the company in general, which confirms the special importance of studying the impact of digitalization on this management sphere. Automation of HR processes is at an active stage of its development today. However, in most enterprises, it is usually only a function of staff accounting and staff

administration. While using of automation company HR processes can significantly improve the quality of processes regarding selection, adaptation, training, development, staff evaluation, HR analytics, etc. At the same time, one of the main tasks is also to reduce the time, emotional, stress load directly on the staff search specialists themselves and in particular in a pandemic of the COVID-19. Such innovative mechanisms in management are considered in the article.

Literature review

Investing in human capital at all times was considered a productive investment. The age of the digital economy has increased the relevance of labor productivity growth through the transformation of human management mechanisms. In general, digitalization of human resource management has passed certain evolutionary stages – from staff management with a predominant accounting function up to human capital management with a focus on creating a competitive advantage. Digital HR transformation is a change in the functioning of HR through the use of data in all areas: remuneration fund, efficiency management, training and development, profit, remuneration, motivation and recruitment (Anguelov, 2019).

Digital HR is effectively applied (Table 1).

In order to provide favorable conditions for improving the work of employees, recruiting and dismissing personnel using modern mobile applications, social networks, cloud technologies, artificial intelligence, etc.

It aims to simplify and speed up work with large databases, to ensure automation of all activities, improvement of communication with customers, suppliers and partners and all environmental institutions, formation of new principles of interaction within the enterprise – between subdivisions, employees, management, transition to new organizational forms of management.

One of the external manifestations of digitalization is the increasingly widespread use of digital – information and communication technologies (ICT) – a set of processes and methods of interaction with information carried out using computer devices, as well as telecommunications (Boiko et al., 2021c).

The variety of manifestations of digitalization encourages to distinguish its typical directions (Table 2).

Digitalization of society has radically changed people's lives and opened new opportunities in the field of HR. At whatever stage of digital development there is every single organization, strategy for managing people, but IT staff occupies a central place in its strategic

Table 1
The possibilities, that digital transformation provides for HR

Opportunities	Characteristics	Examples
Automation of HR processes, based on the using of integrated mobile applications	Digital mobile tools are increasingly embedded in the automated management system of companies. Integrated mobile applications allow: time management; track movement and notify late; deliver different types of messages; control the level of service; conduct online training, trainings and recruitment; accrue compensation etc.	Uber, Uklon, Arbnb, KFC
Digital integration with cloud services	With the help of cloud services, HR overcomes communication barriers, increases the level of staff involvement, automates routine work, saves time, increases the security of HR information storage and increases productivity	Talentsoft, Android, Twitter
Predictable HR analytics and Big Data	The use of HR analytics allows you to visualize and analyze large amounts of data, predict development scenarios and more objectively make managerial decisions	Amazon, Wallmar, Tesco
Virtual reality	Augmented reality technologies allow you to expand opportunities for talent attraction, training and development, evaluate the corporate culture of the company before direct employment, reduce gender pressure	Hilton, DeutscheBank, Vantage Point
Artificial Intelligence	Artificial intelligence as a technology provides the ability to perform intelligent operations, based on the analogy of the human brain. Integrated software products allow you to create a “human image” that can effectively interact with job candidates, HR managers, etc. Technologized chatbots also help to provide services efficiently	Deloitte

Table 2
Directions of business digitalization

Direction	Characteristics	Examples
Customer experience	Formation of multichannel communication system with customers	Call centre, messengers, social networks, own site
Partnership and collaboration	Development of communication infrastructure with partners	API-system, integration interaction of partner companies
Working with data	Collection, sorting, analysis and evaluation of decision data	1C, CRM-system, ERP-system.
Innovation implementation (R&D)	Introduction of new digital technologies for digital development of the company	Softpoint, PERFEXPERT
HR-strategy and culture	Preparation of staff for the introduction of digital technologies	Internal and external training of personnel digital technologies, formation of a suitable corporate culture for constant changes
Value Management	Creating of additional value through virtual customer service	Call centre, messengers, social networks, own site

priorities, which determines the conditions for long-term development.

Latest trends in development of HR-Digital in the near future is shown in Fig. 1.

Digital transformation of HR affects all types of business – from the largest corporations to the smallest microfirms. It includes the transition from long-standing and traditionally used resources, tools and

processes (such as file files and contact lists) to digital information storage tools [25] (Simbeck, 2019). In 2020 in the world there was a massive transformation of HR, after all, many enterprises have mastered digital solutions that help them work effectively remotely because of the pandemic of the COVID-19, the situation with which is still unclear and difficult to predict (Bieńkowska et al., 2020).

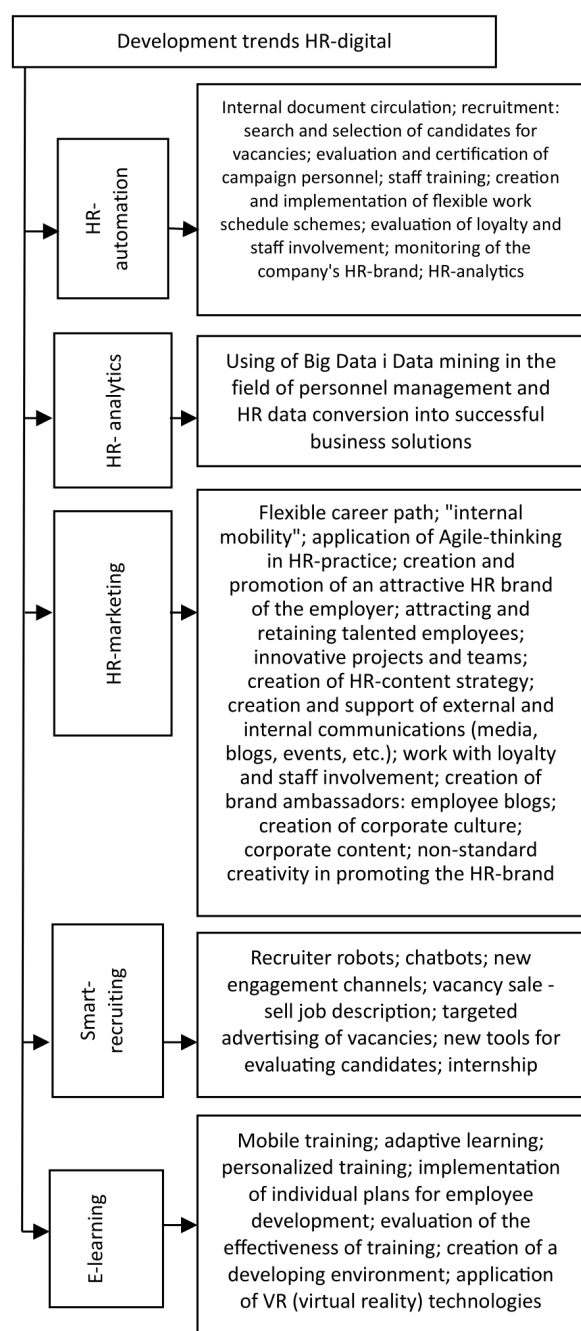


Fig. 1. The latest trends in development of HR-digital

Over the last decade, there has been an active increase in digitalization: The Internet covers 99 percent of the population, aged 12–24 years, aged 25–44 years – 94 percent's, aged 45 + – 54 percent's. On average, for 1 user there are 2–3 types of Digitals-devices, and the average user spends a day 138 minutes in desktop and 107 minutes – on the mobile Internet. Thanks to mobile applications, the digital revolution opens 24/7 access to consumers to meet their requests.

The field of Digital technologies in human resource management today is at the stage of origin, formation, formation, which does not allow to conduct an objective and deep analysis of the scientific definition of HR-Digital (Busulwa et al., 2022).

HR-Digital is defined as an approach built on the principles of integrity of the management model, measurement, data integration, real-time analysis and technological flexibility in the field of human resource management (Allen et al., 2018).

Transform the process of staff management

It is also worth focusing on the directions of digitalization to transform the process of staff management (Table 3), which can predict: application of integrated mobile applications and automation of HR processes; digital integration with cloud systems; HR-analytics and Big Data; use of VR-technologies; artificial intelligence.

Together with the transformation of such important elements of the organization of labor relations, as the workplace and work schedule, in the context of digitalization of the economy and the world labor market, a way of hiring workers also undergoes significant changes.

This element of the organization of labor relations is of great importance, because it defines the rights and obligations of the employer and the employee. In the context of the formation of the digital economy, the method of hiring workers is significantly modified, but its essence, which consists in mediating the relationships of the parties to the employment contract, remains unchanged.

This allows you to apply an updated method of hiring employees when using borrowed labor on the terms of outsourcing and crowdsourcing, as well as freelance involvement of employees under the conditions of outstaffing and self-employment in the form of freelance.

1. Outsourcing is a form of borrowed labor, which involves the transfer of certain types and functions of industrial business by one company to another on the basis of a contract. Companies that provide staff outsourcing services are contacted, when it is necessary to select staff for a short-term or one-time project, for seasonal work or when there is no possibility to expand the staff by the customer company. However, recently, staff outsourcing is considered as an opportunity to transfer outsourcing functions to recruitment and hiring on a long-term basis.

Table 3
Features of Using Digital Technologies in Staff Management

Functions	Directions of digitalization	Advantages
Recruitment	Use of social networks, job search sites to collect information, create and publish vacancies.	Creating a database of potential applicants, expanding opportunities for attracting employees of “new” quality.
Adaptation	Using gamification and a single platform.	Accumulation of all necessary information, including company and passwords, work schedule, office plan, job descriptions, compensation system on a single platform.
Motivation	Accumulating information about personal characteristics, values and preferences of employees and using it for motivational programs.	Providing a higher level of employee motivation based on the use of new progressive forms and methods of motivation.
Personnel development	Passing educational courses through mobile applications, the creation of an electronic platform for learning.	Ensuring continuity of education; variety of forms and methods of learning at a convenient time and place; release of HR department resources.
Staff evaluation	Conducting electronic tessellation, ensuring real-time evaluation online.	Ensuring transparency and objectivity of the process of assessing knowledge, skills and skills of employees.
Control	Use of digital tools to collect reports on all processes and perform tasks at the enterprise.	Ability to assess the efficiency of each employee; providing feedback from employees.

2. Crowdsourcing is a form of borrowed labor that involves the involvement of external in relation to the company of intellectual e-workers for mediating information technologies to effectively and promptly solve problems facing business, the state and society in general.
3. Outstaffing – freelance involvement of e-workers, who provide certain services (works) on behalf of the contractor at the location of the customer and do not directly enter into any legal relations with him (civil, labor). Outstaffing involves the registration of part of the employees in the staff of a third-party company, that acts as a formal employer for the staff of the customer company, ensures the conduct of staff work, calculation and payment of wages, transfer of taxes, as well as compliance with legislation on all issues of labor relations
4. Freelance is a form of self-employment, that involves remote execution of a certain type of work on a freelance basis via the Internet. Among the many options in which the modern practice of applying new forms of work is manifested, freelancing is now the most widespread in the global labor market. Freelancer is a subject of labor relations, that is self-employed and does not necessarily strive for long-term cooperation with a certain employer.

The peculiarity of the present time is that in a globalized society, the world labor market is formed, where the tendency of digitalization of labor relations is clearly traced. Today, during the development of digital technologies, their significance for society is becoming irreplaceable and has a real impact on the spread of the latest forms of labor. In particular, organizational and legal methods are actively used on the latest conditions of intellectual labor. The difference between these methods is to change several features inherent in the classical system of labor relations. Such new approaches should include special labor contracts. Such contracts contain a mechanism for organizing the recruitment of personnel and at the same time provide flexible legal regulation of these labor relations. At the same time, the perception of the workplace is being restructured in the classical sense of this component of labor organization. In addition, it becomes possible to apply a work schedule that will help optimize the working time of the employee as a whole.

Methodology and data

Having considered the existing staff management system at the enterprises, they found that there are many problems in the field of labor relations that in-

terfere with the rational and, accordingly, effective management of the organization as a whole. Managers of enterprises among the main reasons for this condition call the inability of science to provide them with a suitable theoretical apparatus for systematic analysis of labor results and its assessment, which is relevant to the issues of improving the entire production process. Thus, the task is to create by designing such a management model that would increase the efficiency of personnel management of the organization (Dergachova et al., 2020).

A “digital” workplace is the virtual equivalent of a physical workplace that requires proper organization, use and management, as it should become a guarantee of increased efficiency of employees and create more favorable working conditions for them. If for the maintenance of an analog workplace, the company bears the cost of renting, utilities, communication costs (Internet, telephone), furniture, equipment, cleaning services, then the employer’s costs for the “digital” workplace include: computer (laptop, tablet), Internet (communication 4G and 5G) and software (Boiko et al., 2021b). The use of a “digital” workplace has confirmed its effectiveness and relevance during the pandemic of the COVID-19 (Fig. 2). Among the advantages of “digital” jobs – reducing hardware costs, office space, business trips etc. The main challenges of digitalization lie not in the technological plane, but are related to the human factor. The introduction of innovative technologies is a systematic constant persuasion of staff in the need to use new technologies, explaining how this will improve their work, make it easier, better and safer (Wu et al., 2020). The purpose of forming and implementing a universal model of competencies for working remotely in the conditions of digitalization is to develop recommendations for the formation of a universal model of competencies for employees, who have switched to remote operation. Continuing to study the concepts of competence and competence models of different professions, classification, it should be noted, that there is no clear single approach to the list of competencies, in particular social and personal, specialists for remote work.

The phenomenon of distance work, online learning today has already become clear and inalienable for most employers. Thanks to rapid technological progress, digital transformation has become a strong competitive advantage for many companies seeking success, growth and scaling (Morton et al., 2018). The characteristics of the respondents – their level, work experience, field of activity are given in Table 4.

The results of the survey on the importance of competence among employees working remotely are shown in Table 5.

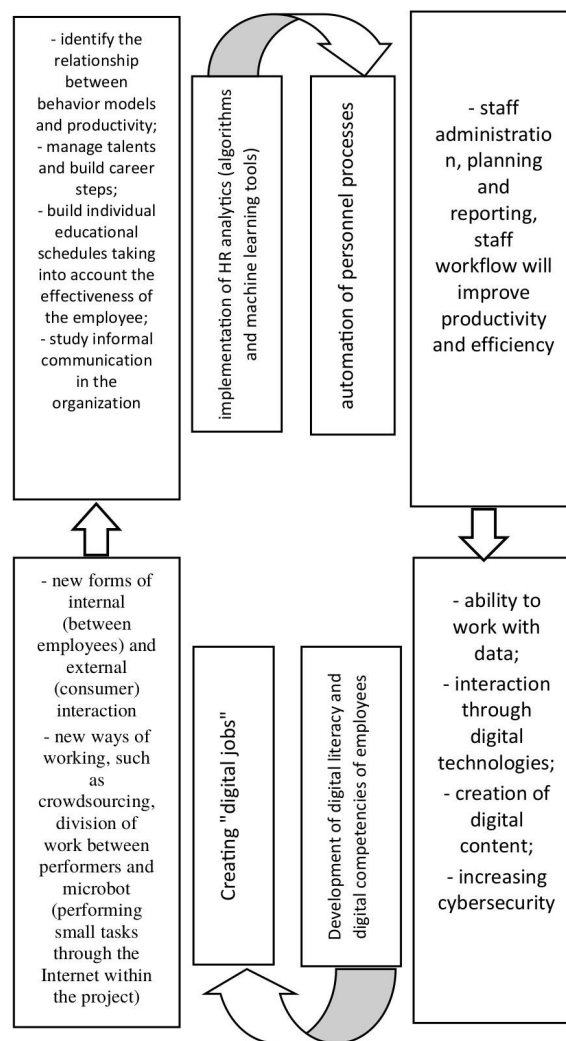


Fig. 2. Directions of digitalization of staff management

But while the digital transformation on a global scale has already begun, the pandemic has forced the process to accelerate at an incredibly fast pace. The COVID-19 completely changed the familiar world – from the everyday life of people to the business environment, and forced humanity to look for a formerly normal world in virtual reality. Using an electronic questionnaire (Google Forms), we conducted an expert survey. This survey confirmed the importance of the above nine competencies.

Competence effective time-management – the ability to determine goals and prioritize, evaluate actions, time and necessary resources to achieve them. Competence-sociability – the ability to communicate, to find compatibility, to establish connections with other people, the ability of a person to qualitatively maximally and apply adequately his abilities to build productive interaction, the ability to easily select

Table 4
Characteristics of the respondents of the research enterprise

Category	Number of respondents, percent
<i>Age</i>	
Under the age of 20	1
20–24 years	21.2
25–34 years	42.9
35–44 years	27.4
45–50 years	7.5
<i>Career level</i>	
Initial	8.7
Medium	32.2
Upper	47.2
Top Executive	11.9
<i>Scope of the organization</i>	
Commercial	100

Table 5
The importance of competence among employees of the research enterprise working remotely

Competence	Level of ownership, percent				
	Insufficient level	Understanding level	Basic level	Level experience	Level skill
Effective Time Management (time-management)	0.9	1.9	10.4	61.3	25.5
Communication skills	1.9	2.8	39.6	34.9	20.8
Flexibility	1.9	1.9	22.6	47.2	26.4
Stress resistance	0.9	8.5	23.6	47.2	19.8
Diligence	0	1.9	29.2	43.4	25.5
Digital literacy	2.8	2.8	14.2	35.8	46.2
Perseverance	1.9	6.6	25.5	37.7	28.3
Responsibility and decision making	0	4.7	23.6	50.9	20.8
Ability to learn	0	8.5	26.4	45.3	19.8

words, to be confident in himself, in his own charismatic, easy to find topics for conversations, regardless of who he communicates with, to lower staff prejudices about other people, their ways to organize their own lives, as well as views, values and general worldview,

to shape the purpose clearly of communications and continue to achieve it (Gómez et al., 2020).

Taking into account the classification of competencies and proposed behavioral indicators, we offer a universal model of competencies for employees working remotely (Fig. 3).

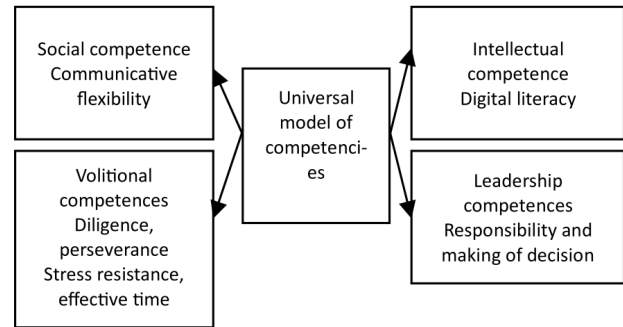


Fig. 3. Overall control structure

Competence-ability to learn – the ability to easily absorb new information and effectively apply it in practice, adapt to changes, independently optimize methods of work, integrate new experience into practice. Competence digital diploma – owning the MS Office package at a high level, working with e-mail, social networks. Mainly confident work with different browsers, skills to work with the operating system Windows. Competence-responsibility and decision-making – the ability to perform the assigned work, solve difficulties independently within the existing powers, take responsibility for their actions, make decisions without addressing others, act on their own initiative within the framework of authority. These nine general competencies are key macro-competencies that find manifestation through appropriate behavioral indicators.

Results

In order to evaluate the employee for possession of competencies, we will establish the weight of the coefficients of competence in the universal model of competencies for employees, working remotely using the expert method of ball evaluation on the Likert interval scale, in which the score of competence depends on the degree of importance of its availability (Table 6).

It is worth noting that the Likert scale is the basis for calculating the share of indicator competency. This scale is filled in by certain experts and reflects their professional vision of the degree of influence of a certain competence for an employee who works remotely. 20 experts took part in this survey.

Table 6
Likert's Scale of Total Estimates

Rating (points)	Rating scale
0	It doesn't matter at all. Compliance with behavioral indicators of competence is not required to perform official duties and cannot affect, in any way, the current efficiency of the employee.
1	Not very important. Lack of compliance with behavioral indicators of competence has a relatively minor impact on the current efficiency of work by the employee. Without this competence, the employee can effectively perform the work
2	Maybe important. Lack of compliance with behavioral indicators of competence can have a relatively significant impact on the current efficiency of work performed by the employee. Without this competence, the employee cannot effectively perform the work.
3	Very important. Compliance with behavioral indicators of competence has an important impact on the efficiency of the work performed by the employee. Without this competence, it is difficult for an employee to effectively perform professional duties.
4	Absolutely important. Compliance with behavioral indicators of competence has a critical impact on the effectiveness of the work performed by the employee. Without this competence, the employee cannot perform his professional duties.

To calculate the share of indicator of a certain competence, we use formula (1). So, the ratio of the sum of scores for the i -competence to the total score from all competencies, provided that the sum of the weighting coefficients of all defined competencies should be equal to one:

$$\delta_i = \frac{\sum_{i=1}^n \varepsilon_i(Y_t)}{\sum_{i=1}^n \sum_{i=1}^n \varepsilon_i} \quad (1)$$

where δ_i is the weighting coefficients of i -competence; i is the number of competences; $\varepsilon_i(Y_t)$ is the pointer indicating the i -th competence of the expert; $\sum_{i=1}^n \varepsilon_i(Y_t)$ is the total estimated indicator of all experts, taking into account certain competencies; $\sum_{i=1}^n \sum_{i=1}^n \varepsilon_i$ is the total indicator of selected experts in all competencies.

Table 7 presents the results of the weight coefficients of the integral indicator of the employee's competence for each of the nine competencies.

Table 6 contains indicators of the behavior of each competence, on the basis of which it is proposed to conduct a survey at the enterprise under study. According to the developed questionnaire, each employee is assessed according to 9 competencies and behavior

Table 7

Calculation of weight coefficients of competencies of an employee of an experimental enterprise working remotely

Competence	The amount of expert points by competence, $\sum_{i=1}^n \varepsilon_i(Y_t)$	Weight factor of competence, δ_i
Effective Time Management (time-management)	6	0.134
Communication skills	53	0.107
Flexibility	52	0.105
Stress resistance	45	0.091
Diligence	56	0.113
Digital literacy	60	0.121
Perseverance	51	0.103
Responsibility and decision making	57	0.115
Ability to learn	54	0.109
$\sum_{i=1}^n \sum_{i=1}^n \varepsilon_i$	494	1.0

indicators that are characteristic of each competency. Then the expert commission, specially created for the evaluation, uses the following evaluation scale:

- 0 – the absolute absence of a specific indicator of behavior in a certain competence;
- 0.5 – partial presence;
- 1 – the explicit presence of this indicator of behavior in the employee.

The number of the expert commission is five people, including the HR manager, the head of the structural unit, the heads of related units with whom the assessed person interacts. After completing the assessment questionnaires, the average values of indicators are calculated according to the scores of experts and the average values of the employee's competencies are determined using formulas (2) and (3).

$$\overline{H}_{i,j} = \frac{\sum_{t=1}^t H_{i,j}(Y_t)}{t} \quad (2)$$

where $\overline{H}_{i,j}$ is the average value of j -indicator of behavior and competence on the scores of experts; t is the number of experts, who took part in the evaluation; i is the ordinal number of competences; j is the ordinal number of the behavior indicator in competence; $H_{i,j}$ is the value of j -indicator of behavior i -competence on expert scores; $H_{i,j}(Y_t)$ is the average value of j -indicator of the behavior i -competence t -expert:

$$H_i = \frac{\sum_{j=1}^n \overline{H}_{i,j}}{n} \quad (3)$$

where H_i is the meaning of i -competence; $\overline{H}_{i,j}$ is the average value of j -behavior of indicator i -competence on expert scores; n is the number of behavior indicators in each competence.

We propose to interpret the results of average competence values according to the (desirability) Harington scale (Baker, 2017), shown in Table 8.

This assessment calculates the integral indicator of the competence of a certain employee according to formula (4) in order to make a management decision regarding the employee:

$$II = \sum p_i \cdot \varepsilon_i \quad (4)$$

where II is the integral indicator of employee competence; p_i is the meaning of points i -competence of the employee; ε_i is the weight factor of i -competence.

Interpretation of the integral indicator of employee competence is proposed using the Harington scale, providing opportunities for the management of the company to make managerial decisions. Provided that the result of the assessment the employee is the range

Table 8
Harington Scale

Level (Harington function)	Boundaries of ball values grading scales indicators	Evaluation Quality Ranges of competence
Lower level	(0–0.2)	too bad
Level below average	(0.2–0.37)	bad
Average level	(0.37–0.63)	satisfactorily
Level above average	(0.63–0.8)	good
High level	(0.8–1.0)	very good

of competence assessment “very negative” or “negative”, the manager must organize his work in the enterprise and determine trainings to clarify competencies that are not clear to the employee. If the employee has as a result of evaluation the range of competence assessment “satisfactory”, the supervisor can organize a mixed form of work, partly in the office, partly in the distance mode, with a referral to training or trainings for the development of unexplained competencies. If the employee has as a result of evaluating the range of competence assessment “good” and “very good”, in this case, the manager can set a completely remote mode of operation, with the provision of independence in the performance of professional tasks. We recommend creating a permanent strategic management team of responding to changes. When developing a new strategy under the COVID-19, the strengths and weaknesses of the enterprise staff management system should be taken into account, taking into account the analysis carried out Table 9.

Management is the art of achieving what is necessary, and leadership is the art of determining what needs to be achieved, implying differences between management within a given system and the ability to change the system itself. The same opinion is emphasized in (Vedernikov et al., 2020a), where it is indicated that people can be managed. Educating a leader improves the efficiency of the human resource management system. Leaders can attract potential leaders, as they think just like the leaders themselves and are not afraid of strong rivals. At the stage of transition to a new strategy and in a financial and economic crisis, culture should help the organization adapt to new conditions. It is necessary to develop an organizational culture so that it becomes a factor of competitiveness of the organization and the most important element of the staff management system.

Table 9
The Impact of Digitalization on HR Processes

Consequence of digitalized personnel management paradigm	Structural change of HR activities
Qualitative changes in requirements for staff	The need for “digital talent”
Automation of production	Replacement of professionals “middle hand” machines
Focus on Digital Talent Development	Transformation of the rights holder’s value
Active change of competencies required to the enterprise	Focus on HiPo-workers
Digitalization of workplaces	Hygromics
Implementation of automated systems accounting of performance indicators based on IoT technologies	Decentralization of managerial functions, up to full cancellation
Increase productivity	Shortcut work graphs
Transition to project work	Active development of leadership
Widespread use of e-learning	Redistribution of responsibility in training of employees
Focus on innovative development	Implementation of design thinking

Figure 4 unified social response of the company personnel to changes is shown.

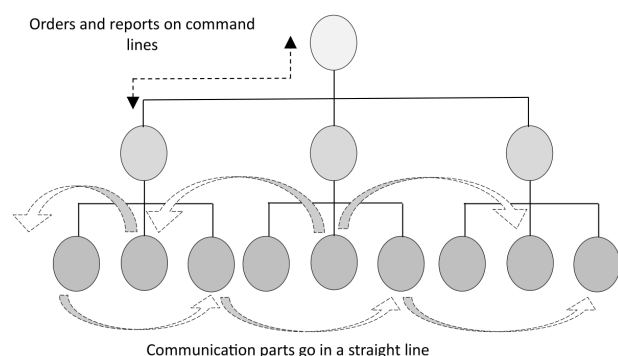


Fig. 4. Communication flows in the system of reports and command lines at the enterprise

The actual scientific contribution of the study lies in substantiating the directions of digitalization HR processes in business, developing practical recommendations for their use.

The main limitations and issues that arose during the course of the study related to the spread of the COVID-19 pandemic. This paper presents studies of megatrends in management associated with the transition to digital technologies in all areas of business in the context of the COVID-19 pandemic: the use of HR bots in recruitment; HR analytics, which requires the use of Big Data technologies, artificial intelligence and cloud solutions in the transfer and processing of structured and unstructured data, which complement the problem-solving mechanisms and allow solving digitalization issues in HR management in the context of the COVID-19 pandemic.

The sphere of digital technologies in HR today is at the stage of its inception, formation, which does not allow for an objective and in-depth analysis of HR-Digital. Digital-HR integrates social networks, mobile applications, cloud technologies, augmented reality and is a new platform for improving the work of both employees and candidates, improving and developing their experience. Developers of digital solutions provide the technical component of digital HR, and company management and HR departments must build their own integrated strategies and programs for digital workforce management. The proposed article forms a list of Digital benefits for increasing efficiency in HR, focusing on reducing the labor intensity of HR functions; accelerating the adoption of managerial and personnel decisions; improving the quality of analytical data; the possibility of forecasting for the current and strategic period; coverage of employees located anywhere in the world; access to modern technological solutions and personal development planning opportunities.

Discussion

Inability to perform a priority, and focusing on secondary issues, lead to stress. The reason for this state in the incorrectly organized flow of particle motion, which with the growth of the company is repeatedly amplified, but continues to move along the same routes as in the very beginning of activity. An important point, which is especially relevant for enterprises, where employees combine many functions. If the flow comes from a top manager, employees tend

to assume that she has come along the command line. They follow a simple “logic”: if from the leader, then it is a command line; you need to throw everything and urgently handle this flow. The director only wanted to know how products of a particular category are sold, and made a regular request to obtain data that he needed for something to perform his own duties, rather than to influence the sales department. This is a mistake, if the answer to such requests relates to the usual duties of an employee, he must move along the usual communication line – from head to employee and back. Of course, so that the managers themselves do not destroy the fast flow system, they will also need to give them the necessary tools in the form of quantitative measurement of the product of each unit, to form a system of reports and meetings, but first of all – an organizational scheme.

The following research developments of the study presented in the article will cover topical issues in the development of information and communication technologies, which will determine the pace of development of the enterprise. HR-digitalization will help increase the motivation of employees, develop their creative thinking, and will also save working time, multimedia tools and interactivity will contribute to a better presentation and assimilation of information.

Conclusions

The formation and implementation of a universal model of competencies for working in a remote mode in conditions of digitalization is proposed. “The methodological aspect of forming and implementing a universal model of competencies for employees, who have switched to remote working mode is presented, which determines the relevance and novelty of the research. The analysis of the concept’s “competence” and “benefits”. Established the relationship between them and justified their delimitation. Social and staff aspects of the employee’s competence, who switched to a remote format of work are investigated. The profile of social and staff competences has been developed. A professional survey was conducted and the importance of competence in employees working remotely was substantiated. Behavioural indicators for key competencies are highlighted. A universal model of competencies is offered. The corresponding weights of competence on the basis of the expert survey are calculated. Recommendations for implementation of the presented model and evaluation of employees, making appropriate managerial decisions have been developed.

However, in e-commerce it is worth paying attention to the advantages of the use of communication technologies. Thus, the use of social networks and corporate portal can help e-commerce enterprises to increase the coverage and effectiveness of communication with employees, to motivate employees for exchanging some knowledge and work together, to form a positive and loyal attitude to the employer, to conduct training through corporate universities online, to solve other current tasks of staff management.

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References

- Allen S., Williams P. and Allen D. (2018), Human resource professionals’ competencies for pluralistic workplaces, *The international journal of management education*, Vol 16, Iss. 2, pp. 309–320, doi: [10.1016/j.ijme.2018.04.001](https://doi.org/10.1016/j.ijme.2018.04.001).
- Anguelov K. (2019), *Motivation strategies of human resources in ICT companies*, in Proc. 2019 International Conference on Creative Business for Smart and Sustainable Growth (CREBUS), 2019, Bulgaria, pp. 1–4, doi: [10.1109/CREBUS.2019.8840080](https://doi.org/10.1109/CREBUS.2019.8840080).
- Azizi M.R., Atlasi R., Ziapour A., Abbas J. and Naemi R. (2021), Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach, *Heliyon*, Vol.7, Iss. 6, pp. e07233, doi: [10.1016/j.heliyon.2021.e07233](https://doi.org/10.1016/j.heliyon.2021.e07233).
- Baker T. (2017), *Performance management for agile organizations: Overthrowing the eight management myths that hold businesses back*, Springer, doi: [10.1007/978-3-319-40153-9](https://doi.org/10.1007/978-3-319-40153-9).
- Bieńkowska A., Tworek K. and Zabłocka-Kluczka A. (2020), Organizational reliability model verification in the crisis escalation phase caused by the COVID-19 pandemic, *Sustainability*, Vol 12, Iss. 10, pp. 4318, doi: [10.3390/su12104318](https://doi.org/10.3390/su12104318).
- Boiko J., Pyatin, I. and Eromenko O. (2021a), Design and Evaluation of the Efficiency of Channel Coding LDPC, Codes for 5G Information Technology, *Indonesian Journal of Electrical Engineering and Informatics (IJEI)*, Vol. 9, No. 4, pp. 867–879, doi: [10.52549/ijeiv9i4.3188](https://doi.org/10.52549/ijeiv9i4.3188).
- Boiko J., Volianska-Savchuk L., Bazaliyska N. and Zelena M. (2021b), *Smart Recruiting as a Modern Tool for HR Hiring in the Context of Business Informatization*, in Proc. 2021 IEEE 11th International Con-

- ference on Advanced Computer Information Technologies (ACIT), 2021, Germany, pp. 284–289, doi: [10.1109/ACIT52158.2021.9548558](https://doi.org/10.1109/ACIT52158.2021.9548558).
- Boiko J., Pyatin I., Karpova L. and Eromenko O. (2021c), *Study of the Influence of Changing Signal Propagation Conditions in the Communication Channel on Bit Error Rate*, In *Data-Centric Business and Applications* (pp. 79–103), Springer, Cham, doi: [10.1007/978-3-030-71892-3_4](https://doi.org/10.1007/978-3-030-71892-3_4).
- Busulwa R., Pickering M. and Mao I. (2022), Digital transformation and hospitality management competencies: Toward an integrative framework, *International Journal of Hospitality Management*, Vol. 102, pp. 103132, doi: [10.1016/j.ijhm.2021.103132](https://doi.org/10.1016/j.ijhm.2021.103132).
- Caligiuri P., De Cieri H., Minbaeva D., Verbeke A. and Zimmermann A. (2020), International HRM insights for navigating the COVID-19 pandemic: Implications for future research and practice, *Journal of international business studies*, Vol. 51, Iss. 5, pp. 697–713, doi: [10.1057/s41267-020-00335-9](https://doi.org/10.1057/s41267-020-00335-9).
- Claus L. (2019), HR disruption – Time already to reinvent talent management, *BRQ Business Research Quarterly*, Vol. 22, Iss. 3, pp. 207–215, doi: [10.1016/j.brq.2019.04.002](https://doi.org/10.1016/j.brq.2019.04.002).
- Cooke F.L., Dickmann M. and Parry E. (2020a), IJHRM after 30 years: taking stock in times of COVID-19 and looking towards the future of HR research, *The International Journal of Human Resource Management*, Vol. 32, Iss. 1, pp. 1–23, doi: [10.1080/09585192.2020.1833070](https://doi.org/10.1080/09585192.2020.1833070).
- Cooke F.L., Schuler R. and Varma A. (2020b), Human resource management research and practice in Asia: Past, present and future, *Human Resource Management Review*, Vol. 30, Iss. 4, pp. 100778, doi: [10.1016/j.hrmr.2020.100778](https://doi.org/10.1016/j.hrmr.2020.100778).
- Dergachova V., Kravchenko M., Kuznietsova K., Dergachova A. and Melnykova V. (2019), Systemic structural analysis of the machine-building enterprises economic sustainability formation mechanism, *Problems and Perspectives in Management*, Vol. 17, Iss. 3, pp. 395–409, doi: [10.21511/ppm.17\(3\).2019.32](https://doi.org/10.21511/ppm.17(3).2019.32).
- Gómez S.M., Mendoza O.E.O., Ramírez J. and Olivás-Luján M.R. (2020), Stress and myths related to the COVID-19 pandemic's effects on remote work. Management Research, *Journal of the Iberoamerican Academy of Management*, Vol. 18, Iss. 4, pp. 401–420, doi: [10.1108/MRJIAM-06-2020-1065](https://doi.org/10.1108/MRJIAM-06-2020-1065).
- Hamza Shuja K., Aqeel M., Jaffar A. and Ahmed A. (2020), COVID-19 pandemic and impending global mental health implications, *Psychiatra Danubina*, Vol. 32, Iss. 1, pp. 32–35, doi: [10.24869/psyd.2020.32](https://doi.org/10.24869/psyd.2020.32).
- Kraus S., Durst S., Ferreira J.J., Veiga P., Kailer N. and Weinmann A. (2022), Digital transformation in business and management research: An overview of the current status quo, *International Journal of Information Management*, Vol. 63, pp. 102466, doi: [10.1016/j.ijinfomgt.2021.102466](https://doi.org/10.1016/j.ijinfomgt.2021.102466).
- Mitrofanova Y.S., Glukhova L.V., Burenina V.I., Evstafeva O.A. and Popova T.N. (2021), Smart production: features of assessing the level of personnel digital readiness, *Procedia Computer Science*, Vol. 192, pp. 2962–2970, doi: [10.1016/j.procs.2021.09.068](https://doi.org/10.1016/j.procs.2021.09.068).
- Morton S., Michaelides R., Roca T. and Wagner H. (2018), Increasing employee engagement in organizational citizenship behaviors within continuous improvement programs in manufacturing: The HR link, *IEEE Transactions on Engineering Management*, Vol. 66, Iss. 4, pp. 650–662, doi: [10.1109/TEM.2018.2854414](https://doi.org/10.1109/TEM.2018.2854414).
- Risley C. (2020), Maintaining performance and employee engagement during the COVID-19 pandemic, *Journal of Library Administration*, Vol. 60, Iss. 6, pp. 653–659, doi: [10.1080/01930826.2020.1773716](https://doi.org/10.1080/01930826.2020.1773716).
- Sikora D.M. and Ferris G.R. (2014), Strategic human resource practice implementation: The critical role of line management, *Human Resource Management Review*, Vol. 24, Iss. 3, pp. 271–281, doi: [10.1016/j.hrmr.2014.03.008](https://doi.org/10.1016/j.hrmr.2014.03.008).
- Simbeck K. (2019), HR analytics and ethics. *IBM Journal of Research and Development*, Vol. 63, Iss. 4/5, pp. 9–1, doi: [10.1147/JRD.2019.2915067](https://doi.org/10.1147/JRD.2019.2915067).
- Su Z., McDonnell D., Wen J., Kozak M., Abbas J. Šegalo S., and Xiang Y.T. (2021), Mental health consequences of COVID-19 media coverage: the need for effective crisis communication practices, *Globalization and health*, Vol. 17, Iss. 1, pp. 1–8, doi: [10.1186/s12992-020-00654-4](https://doi.org/10.1186/s12992-020-00654-4).
- Vedernikov M., Volianska-Savchuk L., Zelena M., Bazaliyska N., Litinska V. and Baksalova O. (2020a), *Infocommunication Paradigm of Corporate Culture Development in HR Management System*, in *Proc. 2020 IEEE International Conference on Problems of Infocommunications. Science and Technology (PIC S&T)*, 2020, Ukraine, pp. 197–201, doi: [10.1109/PICST51311.2020.9468007](https://doi.org/10.1109/PICST51311.2020.9468007).
- Vedernikov M., Zelena M., Volianska-Savchuk L., Litinska V. and Boiko J. (2020b), Management of the social package structure at industrial enterprises on the basis of cluster analysis, *TEM Journal*, Vol. 9, No. 1, pp. 249–260, doi: [10.18421/TEM91-35](https://doi.org/10.18421/TEM91-35).
- Wu L.K., Su W.H., Hsia S.H. and Hou M.F. (2020), Preparedness for the next emerging infectious disease outbreak by implementing strategic human resource management, *Journal of the Chinese Medical Association*, Vol. 83, Iss. 10, pp. 973, doi: [10.1097/JCMA.0000000000000423](https://doi.org/10.1097/JCMA.0000000000000423).