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DIGITAL COMPETENCIES OF PERSONNEL AS A FACTOR OF ORGANIZATIONAL FLEXIBILITY AND ADAPTABILITY OF THE ENTERPRISE

Abstract

The article examines the role of digital competencies of personnel as a key factor in ensuring organizational flexibility and adaptability of enterprises under conditions of environmental turbulence, digital transformation, and crisis instability. The study is based on the premise that modern enterprises face a significant gap between the growing demand for digital skills and the actual level of their development among employees, which limits the effective use of human capital and slows down transformation processes.

The purpose of the research is to substantiate the theoretical and methodological foundations for the formation and development of digital competencies of personnel as a driver of organizational flexibility and adaptability. The paper clarifies the essence of digital competencies, emphasizing their integrated nature, which combines technical skills with soft skills and meta-competencies such as adaptability, creativity, critical thinking, and the ability to

learn continuously. It is argued that such a synergistic combination enables employees to respond effectively to dynamic changes and uncertainty.

The study systematizes modern methods and tools for managing personnel competencies, including digital skills assessment frameworks, HRM and LMS platforms, analytics and monitoring tools, strategic competency management instruments, AI-based solutions, and knowledge management systems. Their comprehensive application allows enterprises to identify skill gaps, design personalized learning trajectories, and enhance decision-making processes.

A model of systematic identification of digital competency needs and organization of personnel training is proposed, which ensures consistency and continuity in skills development. In addition, key performance indicators (KPIs) for assessing the effectiveness of digital competency development are defined, including digital literacy level, employee engagement, productivity growth, and speed of adaptation to new technologies.

The findings highlight that overcoming resistance to change through effective change management practices, leadership development, and the formation of a learning-oriented organizational culture is a critical prerequisite for successful digital transformation. It is concluded that the development of digital competencies significantly enhances the flexibility, adaptability, and resilience of enterprises, enabling them to maintain competitiveness and achieve sustainable development in conditions of uncertainty.

Keywords: information literacy, personnel development, digital competences, meta-competencies, management tools.

Problem statement. In today's conditions of high turbulence of the business environment, caused by globalization processes, the digital transformation of the economy, as well as crisis phenomena related to military actions, enterprises are faced with the need for quick adaptation to dynamic changes, which, in turn,

actualizes the issue of forming organizational flexibility and adaptability. At the same time, there is a significant gap between the needs of business in the digital competencies of personnel and the real level of their formation, which is due to both the insufficient level of integration of digital and social-behavioral (soft skills) skills, and the high level of resistance to changes among employees.

Despite the rapid development of automation, artificial intelligence technologies and digital platforms, a significant part of enterprises does not have a systematic approach to managing the development of digital competencies, which makes it impossible to effectively use human capital as a key resource for ensuring organizational sustainability. Under such conditions, there is a need to form a comprehensive approach to the development of personnel competencies and to assess their impact on the flexibility and adaptability of the enterprise.

Analysis of recent research and publications. Ololade A. Shonubi is investigating that modern organizations need alternatives to existing business models due to rapid digitalization development and global competitive pressure. This study emphasizes the importance of applying individual strategies for the digital transformation of enterprises and emphasizes the importance of digital training of personnel [1]. Litorovych O., Karyy O. justify that digital transformation involves not only the installation of modern hardware or software, but also fundamental changes in approaches to management, corporate culture and external communications [2]. Melnyk, O., & Ruda, M. point out that change management is essential to the success of digital transformation – is helping individuals and teams embrace change. Through strategic planning and skilful change management, managers can achieve lasting success in the digital environment [3]. Melnyk, L. H., Karintseva, O. I., Kubatko, O. V., Sotnyk, I. M., & Zavdovieva, Y. M. generalize that a person is the driving force behind all digital transformations of society and needs certain digital competencies that include the confident, critical and responsible use of digital technologies for learning, working and participating in public life. Digital

competencies include information literacy; the ability to perceive data, communicate and collaborate with other participants in social processes; the ability to create digital content (including programming); organizing security (including digital well-being and solving cybersecurity problems) and are achieved through lifelong learning [4].

Kanova, O., Kryvobok, K., & Omarov, E. note that under the influence of rapid changes, business managers must adapt their employees to new realities and promote the development of their leadership qualities. The effectiveness of the formulation of a change strategy, corporate culture, and organizational readiness for innovative technologies depends on the development of personnel and their leadership qualities [5]. Sacavém, A., de Bem Machado, A., dos Santos, J. R., Palma-Moreira, A., Belchior-Rocha, H., & Au-Yong-Oliveira, M. emphasize that effective leadership is critical to managing digital transformation, integrating technology into organizational processes to facilitate learning, collaboration and flexibility, allowing companies to adapt to market changes, reduce uncertainty and improve decision-making for sustainable growth. By using the right tools and with the right frequency, leaders can develop team cohesion even from a distance [6]. A large number of publications on this topic confirms the relevance of the researched issues, but it requires further study of the formation of a comprehensive approach to the development of personnel competencies and assessment of their impact on the flexibility and adaptability of the enterprise in conditions of rapid changes and environmental uncertainty.

Formulation of the article's objectives. The purpose of the study is to substantiate the theoretical and methodological foundations of the formation and development of digital competencies of personnel as a key factor in ensuring the organizational flexibility and adaptability of the enterprise in conditions of digital transformation and crisis instability. To achieve the set goal, the following tasks are defined:

- investigate the essence of digital competencies of personnel and their role in ensuring organizational flexibility;
- systematize methods and tools for assessing the level of digital competencies;
- identify key performance indicators (KPI) for the development of digital skills;
- develop a model of systematic identification of needs in digital competencies and organization of personnel training;
- justify the impact of the development of digital competencies on the adaptability of the enterprise in crisis conditions.

Main part. In today's knowledge economy, staff digital competencies act not only as a functional set of skills related to the use of information and communication technologies, but also as a strategic resource that ensures the organization's ability to quickly respond to changes in the external environment. At the same time, organizational flexibility is interpreted as the ability of the enterprise to quickly change business processes, management structure and personnel behavior patterns in accordance with new conditions, while adaptability reflects long-term capacity for transformation and recovery. To ensure the flexibility and adaptability of enterprises, a complex of digital competencies of personnel (the ability to find, evaluate, process and interpret digital information for making operational decisions), communication in a digital environment (effective use of digital tools for cooperation, for example Zoom, Teams, CRM systems), creation of digital content and problem-solving security. Key to adaptation are the ability to quickly master new digital tools, work with big data, use cloud technologies and platforms for remote cooperation. Along with the scientific justification of the concept of digital competences, the updated Digital Competence framework (DigComp 3.0) presented in the European Union is also considered, in which their components are indicated: Artificial Intelligence (including Generative AI) competence; Cybersecurity

competence; Digital rights, choice and responsibilities; Wellbeing in digital environments; Competence to tackle misinformation and disinformation [7].

An important aspect is that digital competencies should be addressed in relation to soft skills, in particular critical thinking, learning ability, communication skills and readiness for change, since it is their synergy that ensures effective implementation of digital solutions. In addition, the researchers note that in conditions of crises and turbulence of the environment, meta-skills become more important, which allow in unpredictable situations to think creatively, respond flexibly to changes, quickly learn and master new skills [8]. Researchers and practitioners primarily attribute adaptability, creativity, self-awareness, the ability to work with goals (in particular, to find meaning), as well as analytical thinking necessary for solving problems to the key meta-competences of a modern employee. [9]. Insufficient qualification of personnel inhibits the process of digital transformation of the enterprise and increases training costs [10]. The lack of an integrated approach to the development of such competencies leads to the formation of a digital divide, which is manifested in the discrepancy between the requirements of the digitalized work environment and the real capabilities of the staff.

In the context of the growing uncertainty of the external environment, the dynamism of market changes and the accelerated digital transformation, the introduction of modern methods and tools for managing personnel competencies is gaining special relevance. Their systematic use contributes to the timely identification of skills gaps, the development of key meta-competencies and the formation of the ability of employees to effectively respond to new challenges. This, in turn, ensures an increase in organizational flexibility, adaptability of the enterprise and its resistance to change. In order to summarize and systematize such approaches, Table 1 presents modern methods and tools for managing personnel competencies, their examples and areas of application.

Table 1

Modern methods and tools of personnel competence management

Name of the group of methods and tools	Tool name	Example	Scope
Methods of determining digital literacy	ICDL/ECDL (European Computer Driving Licence), Цифрограм, DigComp 3, Digital Competence Wheel	Corporate portals	For wide application, digital literacy for citizens
Digital platforms and systems, including for continuing training	HRM-системи (Human Resource Management Systems)	SAP SuccessFactors, Workday, BambooHR platforms, creating digital competency profiles for different positions	training, competence management, skills record keeping
	Learning Management Systems (LMS)	Системи Moodle, Coursera for Business, Udemy for Business Microlearning platforms	organization of corporate training and professional development
	Personnel evaluation platforms	Digital Skills Assessment, 360-degree feedback, Harrison Assessments, Criteria Corp, performance analysis, Key Performance Indicators	provide a multidimensional assessment of employee skills
Analytics and monitoring tools	Big Data Analytics platforms	Power BI, Tableau, Zoho Analytics	they analyze data on the effectiveness of employees and the compliance of their competences with the goals of the organization
	Staff sentiment monitoring tools	Officevibe, Culture Amp, staff surveys and self-diagnosis	Evaluation by employees of their own competences and the need for improvement
Methods of strategic competence management	Competency Frameworks, Skills Matrix, Talent Mapping	SFIA Framework, DigComp for Organizations, competency models	strategic planning of personnel development; determination of competence gaps (skills gaps)
Development and reskilling tools	Upskilling / Reskilling programs; Individual Development Plans (IDP); Mentoring & Coaching platforms	Degreed, EdCast, LinkedIn Learning; internal corporate development programs	development of digital and meta-competencies; preparation for changes and transformations
Tools based on artificial intelligence	AI-based skill assessment; Adaptive learning systems; Talent intelligence platforms	Eightfold AI; Gloat; Oracle Dynamic Skills	personalized learning; automatic selection of educational trajectories
Knowledge management tools	Knowledge bases ; corporate wiki; knowledge sharing systems	Confluence; Notion; SharePoint	accumulation and transfer of knowledge; support for continuing training

Source: Formed by authors based on [11; 12; 13]

In order to ensure the systematicity of the process of development of digital competencies, a model is proposed, which includes the following stages (Fig 1) Tooling may include the use of HR analytics, distance learning platforms (LMS), talent management systems (TMS), and digital tracking systems that allow you to track progress in skills development.

Of particular importance is taking into account the factor of resistance to change, which can be minimized by implementing effective change-management strategies, developing leadership and creating a favorable organizational environment focused on learning and innovation.

Key KPIs for the development of digital competencies of personnel can be:

- staff digital literacy rate (Digital Literacy Index);
- proportion of employees who have received digital training;
- speed of adaptation to new digital tools;
- labor productivity after the implementation of digital solutions;
- level of staff involvement (Employee Engagement);
- reducing the execution time of operational processes; index of innovative activity.

Thus, the development of digital competencies of personnel acts as a critical factor in increasing the organizational flexibility and adaptability of the enterprise, which allows not only to function effectively in conditions of uncertainty, but also to form sustainable competitive advantages in the long term.

Conclusions. As a result of the conducted research, it was established that in conditions of high turbulence, digital transformation and crisis challenges, the development of digital competencies of personnel acquires the status of a strategic factor in ensuring organizational flexibility and adaptability of the enterprise. Digital competencies have been shown to go beyond purely technical skills and encompass the ability to think critically, communicate quickly, learn quickly, and use digital tools effectively in management decision-making.

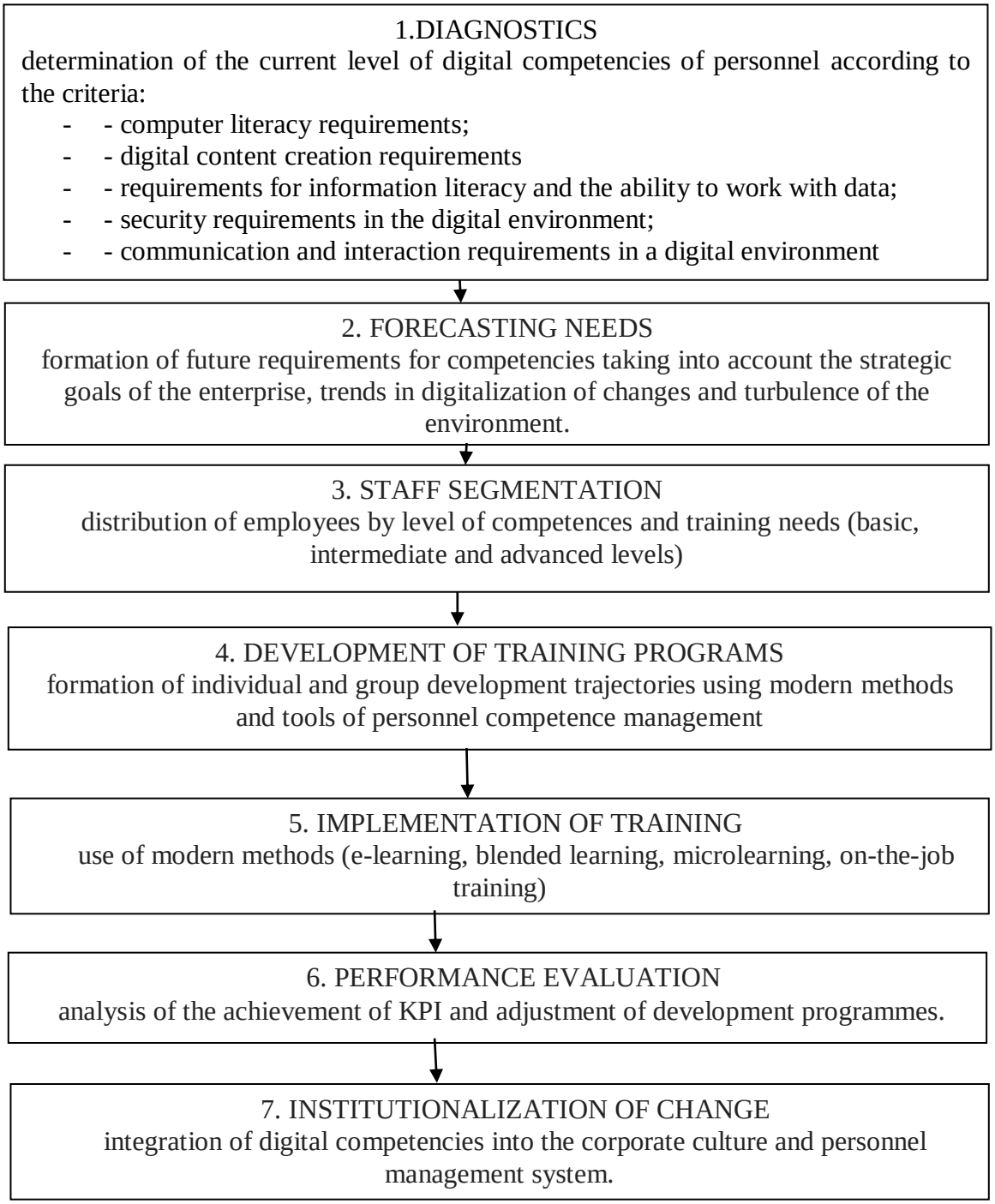


Fig. 1. Model of systematic identification of needs in digital competencies and organization of personnel training

Source: developed by the authors

It is substantiated that the key condition for effective digital transformation is the integration of digital competencies with socio-behavioral skills and meta-competencies, which ensure the ability of personnel to adapt in conditions of uncertainty. It was established that the lack of a systematic approach to managing the development of competencies leads to the formation of a «digital gap» between business needs and real opportunities of employees, which reduces the efficiency of the use of human capital.

The systematization of modern methods and tools for personnel competence management made it possible to single out their key groups, in particular digital skills assessment tools, digital learning platforms, analytical systems, strategic competence management tools, solutions based on artificial intelligence and knowledge management systems. It has been proven that their complex use ensures timely identification of gaps in competencies, formation of individual development trajectories and improvement of the effectiveness of management decisions.

The proposed model of systematic identification of needs in digital competencies and organization of personnel training allows to ensure consistency and continuity of skills development, orienting the enterprise to a proactive response to changes in the external environment. The defined key performance indicators (KPI) of the development of digital competencies create the basis for a quantitative assessment of the effectiveness of the implemented measures and their impact on the productivity and involvement of personnel.

It is substantiated that overcoming resistance to change is an important prerequisite for the successful implementation of competence development programs and requires the use of change-management tools, leadership development and the formation of an organizational culture focused on learning and innovation.

Thus, the development of digital competencies of personnel in combination with the systematic use of modern management tools ensures an increase in organizational flexibility, adaptability and sustainability of the enterprise, creating a basis for the formation of long-term competitive advantages in conditions of uncertainty. Prospects for further research consist in the development of applied methods for quantitative assessment of the impact of digital competencies on the economic results of enterprises and adaptation of the proposed approaches to industry features.

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