DIGITAL TECHNOLOGIES INFLUENCE ON BUSINESS ORGANIZATION MANAGEMENT

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Today, it is almost impossible to imagine a functioning business organization without the use of modern technologies such as computer or telecommunications devices. On the one hand, business development is dependent on digital technologies, but on the other hand, digital technologies create business opportunities. Accordingly, it can be argued that modern digital technologies correlate with changes in the effectiveness of business organization management and transform the managerial process.

Leading researchers in a field of management, such as Drucker, Dyson, Gendy, Saffo, and Sange, have argued that in the 21st century the main challenge for leaders is not only the technological revolution, but also the management of an organization's resources. Managers must understand that changes in technology will not only improve the quality of information about certain processes in the organization, but will also have a great impact on its overall effectiveness, so the use of information, telecommunication and digital technologies, as well as the company's ability to adapt to a competitive environment with its constant development are some of the key factors of success in the context of digital transformation[39].

Digital transformation is the process of using digital technologies to create new or modify existing business processes or consumer experiences for effective operation in a changing market and business requirements[40]. It is a cultural, organizational and operational change of an organization, industry or ecosystem through an intelligent integration of digital technologies, processes and competencies at all levels and functions in several stages. Digital

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[39]Aaron Ayeta M. Impact of ICT on human resource management. ACADEMIA. 2019. https://www.academia.edu/12682490/IMPACT_OF_ICT_ON_HUMAN_RESOURCE_MANAGEMENT

[40] What Is Digital Transformation? Salesforce. https://www.salesforce.com/products/platform/what-is-digital-transformation/

transformation uses technologies to create value for different stakeholders (customers in the broadest sense) through the process of innovation and gaining opportunities for rapid adaptation to changing market conditions.

Despite the fact that the term "digital transformation" is most often used in the context of business organizations, this process is inherent in other organizations, in particular - the government. A clear example of how digital transformation affects virtually all aspects of life is Japan, where the Society 5.0 initiative has been launched, which is to some extent an analogy of the Industry 4.0 transformation vision designed for society as a whole[41]. Given the societal significance and origins of digital transformation, it is important to understand the fact that it affects the business organization not only internally, through the transformational changes implemented by management, but also externally - by society, government and digital trends that set new requirements and standards for a work process, communication processes, coordination, etc. This phenomenon also determines the essence of the impact of digital transformation on management. Management as a process that includes all aspects of a business organization is much more vulnerable to stimuli from both its external and internal environment and, therefore, must be much more flexible in its actions to maintain control over the organization and compliance with competitive conditions of the environment in which it is located.

The main areas of digital transformation influence are the following: digital transformation of society, digital transformation of business environment, digital transformation of employees, digital transformation of management, digital transformation of operating activities (Table 1). Together, these areas fully describe the process of modern digital transformation.

Digital transformation influence on business organization activity can be viewed from three main sides - digitization of employees, digitization of business processes and digitization of management. All of them are highly interconnected, since they create

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[41] Digital transformation: online guide to digital business transformation. i-Scoop. https://www.i-scoop.eu/digital-transformation/

a basis for business organization management's digital transformation[42].

Table 1 - Areas of digital transformation influence

Areas of influence	Description
Digital transformation of society	Wide spreading of digital technologies in everyday life, in particular - information and communication technologies (social networks, messengers), widespread use of the Internet, in particular - mobile 3G, 4G, 5G networks
Digital transformation of business environment	The transition from analog to digital communication mechanisms between business organizations, the use of digital analytical tools for business activities, in particular - to determine market strategy, behavioral strategy and communication with competitors.
Digital transformation of employees	Formation of a number of behavioural features, requests, needs of employees related to the use of digital technologies, aimed at improving efficiency, simplifying routine tasks, providing personal communication needs. These phenomena are closely related to the "digital transformation of society" described above, as this process gives employees a set of expectations that business organization cannot always meet due to a number of internal or external obstacles.
Digital transformation of management	A comprehensive use of digital tools in management at all its stages, in particular - in the processes of operational and strategic planning, organizational design, motivation, control, performance management.
Digital transformation of operating activities	Use of digital tools in the implementation of direct operational activities of a business organization, sales of its products, interactions with consumers and customers, etc.

Source: Formed by author

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[42] Strohmeier, D. HRM in the digital age – digital changes and challenges of the HR profession. Employee Relations. 2014. No 36(4).

The concept of "digitization of workers" as a category is quite common in the modern research literature, but no consensus has been reached on its single essence. Quite often, when mentioning this issue, scientists and researchers in the field of management use quite specific concepts, such as "digital natives"[43], "digital millennials"[44] and "digital generation"[45].

In essence, they are all aimed at explaining a new type of worker, a workforce that has been formed in the new digital age. A typical representative of this relatively new cohort of employees has a special set of characteristics, needs, skills, worldviews and types of behavior that shape both his role in the organization as a whole and his relationships with colleagues and management. In particular, one of the important examples of such differentiation of "digitalized workers" from their classic type are completely different, higher requirements for receiving and absorbing information, as well as the ability to provide their own feedback using modern digital communication sources.

The impact of digital transformation has also affected business leaders. In particular, the requirements for potential employees have been significantly changed when hiring. If earlier the main indicators were the presence of technical skills in a given field, the ability to quickly complete the required tasks, high levels of discipline and responsibility for their own actions, in modern times these characteristics have been changed, adding such competencies as a so-called "digital literacy", i.e. ability to work quickly and efficiently with the information technology base used in the process of work, the possibility of multitasking, the ability to communicate quickly and efficiently through digital communication channels. Quite a lot of emphasis is placed on the ability to quickly search for information with its further processing for the purposes required by the

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[43] Prensky, M. Digital natives, digital immigrants. On the Horizon. 2001. No 9(5), pp. 1-6.
[44] Deal, J.J., Altman, D.G., Rogelberg, S.G. Millennials at work: what we know and what we need to do (if anything). Journal of Business and Psychology. 2010. No 25(2), pp. 191-199.
[45] Tapscott, D. Grown up Digital: How the Net Generation is Changing Your World. HC, McGraw-Hill. 2008.

organization, while the requirements for a wide knowledge base are significantly reduced due to their availability "on demand".

The concept of "digitization of business processes" is closely related to the concept of "digitization of employees". Most of the work in any modern organization is related to obtaining, processing or analyzing information. At the same time, almost all information in the modern world can be described as digital, formerly digital or the one that could be digital[46]. In fact, the use of digital technologies in many areas has long ceased to be part of the work, and became the work itself, because it directly affects each of its elements.

"Digitization of management" of business organizations refers to their use of digital technologies in the processes of direct planning, organization, motivation, control of their activities, as well as communication using digital technologies at such levels as "management-management", "management-staff" and "staff-staff "at all stages of the managerial cycle to achieve the goals of the business organization. In essence, the digital transformation has given business leaders some unprecedented communication and control mechanisms that have enabled them to monitor the activities of virtually the entire organization in real time, including identifying bottlenecks and effectively addressing them.

One of the most important challenges of "digitization of management" is the streamlining of communication links in a business organization, which can be somewhat chaotic due to their availability at any time on demand, as well as eliminating the "digital divide" - a phenomenon arising from differences in digital competencies both between different specific employees of the organization and between its entire units, which can significantly slow down the organization. The first problem can be effectively solved by using classic management methods, while the second problem requires more comprehensive measures, such as creating opportunities for employees to learn how to work in a digital transformation era, or changing the business organization's recruitment policy with a focus on their digital literacy.

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[46]Bawden, D. Origins and concepts of digital literacy. Digital Literacies: Concepts, Policies and Practices. 2008. pp. 17-32.

The main elements of the implementation of digital tools in the management of a business organization are tools and systems, capabilities, activities, field of view and experience (Table 2).

Table 2 - Elements of digital tools implementation in a management activity of a business organization

Elements	Description
Opportunities	A direct usage of digitally obtained information by the employees and the ways of implementing digital communication into employee's workflow.
Activities	A routine multitude of digital cooperation, which includes everything from employee's clicks and choices in select programs to actual business processes.
Field of view	A digital space that provides employee with necessary information and competencies.
Experience	Location of complex, intuitive and productive elements in interaction with digital instruments.
Tools and systems	IT components of workplace digitization.

Source: Formed by author based on[47]

Ensuring a successful use of digital technologies both in the management of an organization and in its daily activities in practice is both simpler and more complex than it seems at a first glance.

There are a couple of measures that can radically improve "digital wellbeing" in business organization management, including but not limited to the ability to work remotely, encouraging employees to work with their own devices, developing mobile applications to solve problems that arise on a regular basis, creating mechanisms of instant communication between employees and managers, creating mechanisms of providing employee feedback (especially − anonymously), accelerating the process of solving different problems directly related to digital support of organization's employees, including software installation, maintenance of the devices in use, etc.

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[47] Robertson J. What is digital employee experience. Step Two. 2020. https://www.steptwo.com.au/papers/what-is-digital-employee-experience/

Despite the relative simplicity of all the steps described above, business organizations quite often face significant problems in their implementation. The main factors preventing "digital well-being" in business organizations are ignorance of managerial personnel, excessive conservatism and bureaucracy, the presence of technological gaps, as well as lack of resources (Table 3).

Table 3 – Preventing factors of the development of business organization's "digital well-being"

Factor	Description
Ignorance of managerial personnel	Lack of understanding of the importance of implementing a balanced policy for the implementation of digital tools in the management and operation of a business organization.
Excessive conservatism	Reluctance to introduce new approaches to solving classic organizational problems.
Excessive bureaucracy	Bureaucratization of communication systems and subsystems in the organization, which does not allow the effective communication and cooperation between its various departments. For example, the requirement of a large amount of paperwork to fill out when installing software for each individual employee, which is typical for large business organizations, especially - holdings.
"Technological gap"	There is a significant difference in digital skills between employees or groups of employees. It often occurs due to age and functional characteristics. For example, the younger generation, or IT staff, are more likely to use digital technologies effectively.
Lack of resources	Lack of possibility to implement the provision of an effective digital environment due to objective reasons. For example, a lack of funding, a lack of access to suppliers of equipment and devices.

Source: Formed by author

Quite often there are several of the above obstacles in business organizations, which further complicate the implementation of digital technologies in the management of a business organization. In particular, this problem is inherent in large business organizations

with a conservative style of management, which have long existed. Organizations in which long cycles of renewal of fixed assets and stable technologies of production or activity (in particular - enterprises in the food industry) are present are particularly vulnerable to this problem.

It is important to understand the impact of digital transformation on the management of business processes occurring in the organization directly. The digitization of business processes in management is aimed at improving the way companies conduct cross-functional work, and provides opportunities for the whole company to effectively manage the entire life cycle of business processes[48].

In recent decades, business process management has had a strong focus on digitization, which was characterized by the analysis and solution of various problems related to the activities of the organization. As a result, wealth of knowledge and techniques have emerged, such as Lean Management, Six Sigma, or Workflow Management.

The main types of digital business processes are integration business processes, business processes related to human activities, business processes related to decision-making and business processes related to documentation (Table 4).

Digitization of business processes helps to increase the efficiency of business organization management and creates a new paradigm of management. Given the factors described above, it can be argued that the use of digital tools and technologies in management has a significant impact at all stages of the so-called "managerial cycle" - planning, organization, motivation and control.

Planning. It is advisable to start the analysis of the impact of digitization on business management from the first stage of the management cycle - planning. In general, it is impossible to say unequivocally that planning has changed greatly with the transition to a new digital era. In fact, the planning process has undergone minor changes, in particular in the types of planning tools used.

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[48]vom Brocke J, Rosemann M. Handbook on Business Process Management 1: Introduction, Methods, and Information Systems. Springer. 2015.

Table 4 - Description of digital business processes

Business processes	Description
Integration business processes	A major focus on automatization of processes that integrate systems and applications. A limitation of employee role in integrational processes. Usage of externally oriented processes.
Business processes related to human activities	Automatization of consumer service activities. Call center management. Other processes with a degree of human communication.
Business processes related to decision-making	A focus on a usage of digital information sources by the employees, especially when making critical decisions and operating in a changing and dynamic environment.
Business processes related to documentation	A focus on a quick processing of documents in a digital format, which ensures a more rapid transition of documents to their finished form.

Source: Formed by author based on[49]

However, the biggest impact of digitization on planning is the technology of developing plans that directly relate to the digital transformation of business organizations. These types of "digital planning" (often called "digital transformation strategies") not only give business organizations an idea of the future implementation of certain technologies in both management and information processes, but also, in modern conditions, set the tone to the whole process of business organization development.

Digital transformation strategies (DTS) are a central concept for coordinating, setting priorities and implementing the digital transformation of a business organization[50]. They have a holistic focus, and although they intersect with other strategies within the

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[49] Matt, C., Hess, T., Benlian, A. Photography Revolution. Journal of Strategic Information Systems. 2015. No 18(1), pp. 46-55. (2015).

business organization, they often align with existing functional strategies. In contrast to the prevailing understanding of digital transformation strategy as a functional level strategy that must be aligned with a business strategy for digital business management transformation, the digital transformation strategy reflects the overall change needed in order to use digital technology in business management. The concept of digital transformation strategy promotes a new idea of digital business strategy, which is sometimes perceived as a fusion between the organizations' IT strategy and its business strategy[51]. Although digital business strategies go beyond a technology-oriented view of different concepts of IT as well as information systems[52] [53], they also include concepts of business opportunities arising from the application of digital technologies in management. The digital transformation strategy focuses on measures aimed at achieving the desired future state of digital transformation by the business organization. Business organizations that implement a strategy of digital transformation increase their efficiency. Digital transformation helps streamline communication, improve collaboration and shift the focus from the project implementation process to strategy and results.

Organization. The transformation of the "organization" function under the influence of digital technologies is mainly associated with improving communication between employees and teams, expanding cooperation in teams, increasing the focus on results rather than the process of achieving them, as well as increasing amounts of analytical information to improve organizational design processes.

Traditional communication tools such as e-mail are inflexible, because they are not designed to communicate in real time. Often, important information is lost in the accumulation of correspondence

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[51]Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., Venkatraman, N. V. Digital Business Strategy: Toward a Next Generation of Insights. MIS Quarterly, 2013. No 37(2), pp. 471-482.

[52]Mocker, M., Preston, D. S., Teubner, A. Information Systems Strategy: Reconceptualization, Measurement, and Implications. MIS Quarterly. 2010. No 34(2), p. 233.

[53]Teubner, R. A. Information Systems Strategy. Business & Information Systems Engineering. 2013. No 5(4), pp. 243-257.

chains, which seriously affects productivity. At the same time, collaborative work management software allows employees to communicate and interact in real time, significantly saving time resource.

In addition to simply improving the effectiveness of internal communication, these tools also increase the effectiveness of employees. When team members are relieved of the obligation to filter hundreds of emails a day just to keep up with the progress of the project, they have the opportunity to spend more time developing and discussing project strategies - exactly what the immediate focus should be on attention for its success.

Along with facilitating more effective, strategy-oriented communication, modern work management technologies enable teams to collaborate truly effectively. With the appropriate platform, managers, project managers and team members can add comments, assign tasks, organize deadlines, inspect and approve assets, and manage almost everything else related to the project in one convenient application. This deep level of cooperation inevitably strengthens the sense of shared responsibility of teammates and contributes to the formation of a cooperative, synergistic environment. A study by Wrike[54] found that workers who saw themselves as active collaborators were more involved, less prone to exhaustion, and more successful than those who were more isolated from teammates. The same study showed that workers in such an environment performed their work effectively 64% longer.

Digital transformation automates workflows and coordinates traditional organizational design tasks, giving managers more time to focus on strategy optimization and project implementation. With more digital and process automation tools at their disposal, managers offer the best ways to align each project with their business strategies and goals - and deliver better results in the process.

Digital transformation provides managers with analytical technology for data-driven decision-making, analysis of models and

[54]McAbee J. 4 Ways Digital Transformation Is Changing Project Management. Wrike. 2019. https://www.wrike.com/blog/digital-transformation-changing-project-management/

trends, and ultimately increases project effectiveness and efficiency. Such access to this type of data also helps executives and managers make more informed decisions faster and easier than without the use of digital technology. Reliable analytical reporting helps managers track projects and track budgets using real-time cost-benefit analysis. In-depth datasets can also be easily explained to stakeholders and managers, giving them an accurate picture of the situation and helping them to plan future initiatives and make critical strategic decisions.

Motivation. Speaking of the relationship between employees and management, we must mention an important stage of the managerial cycle - motivation. From the management's point of view, the motivation of employees is carried out in such way that their behavior brings the greatest benefit to the organization. In this aspect, digital technologies play an extremely important role, as they can be used to create and develop a variety of cognitive skills, as digital technologies include the ability to absorb large amounts of information that teaches people how to develop skills and how to think and act systemically[55].

Business organizations must provide the right incentives and a motivating work environment to promote the optimal diffusion of information and knowledge, which in turn should lead to increased productivity.

To study the impact of digital technology on employee motivation, the University of Rennes in Luxembourg conducted a research in 2011[56]. To determine the correlation between the use of digital technologies and motivation, researchers used comprehensive data from the European Social Survey. The research results emphasize the positive impact of digital technologies and innovative labor practices on the productivity of people and productive resources. The results of the use of digital technologies to motivate employees show that by enabling the use of digital technologies in

[55]Strohmeier, S. Employee relationship management: Realizing competitive advantage through information technology?. Human Resource Management Review. 2013. Vol. 23.

[56]Ludivine M. The effects of ICT use on employee's motivations: an empirical evaluation. CEPS/INSTEAD, Luxembourg and Rennes. 2011. P. 14.

the workplace, the organization creates an enriching work environment that has a positive effect on the net internal motivation of employees. It has also been found that virtualization of contacts using digital technology instead of personal communication reduces the development of team spirit between employees, but the magnitude of this effect is less important than the magnitude of a positive connection with the need for team recognition[16].

Control. The introduction of digital technologies contributes to the creation of new, more advanced mechanisms for managing employee performance, eliminating the complexity, inaccuracy and opacity of classical methods of employee control, creating an atmosphere of interactivity and goal orientation, which helps increase employee productivity. Digital technologies provide easy access to information about the activities of employees, which allows managers to analyze, evaluate the effectiveness of their activities and adjust their set of tasks.

One of the ways to implement digital technologies in the management of the organization is to manage employee productivity, which refers to the process of control in the management cycle. Traditional methods of monitoring employee performance are quite time consuming, inaccurate and opaque. A performance review for most companies is an annual obligation when employees sit with their supervisors and try to demonstrate the maximum amount of their competencies, backed up by some dubious evidence that is quite difficult to substantiate.

Traditional performance monitoring frustrates and burdens employees and is quite difficult for managers. Managers have criteria (and perhaps a quota for each performance appraisal), and employees often do not know how to justify their contribution to the business. Such control usually results in a normalized review, which often does not satisfy employees, creating a list of goals they must meet for the next year to improve their current assessments, which they have a high chance of forgetting in a short period.

One way to solve this problem is to use elements of a "digital workplace" in performance appraisals. The digital workplace positively differs from traditional methods in its form, as it is interactive, goal-oriented, and conducive to recording and storing

information. It allows for a continuous, fixed assessment of employee contributions, denying the need for manual collection of information. It also supports the focus of employees on achieving maximum results by providing the means to control their own work.

Project management tools allow employees to work remotely, flexibly and securely through simple tools such as a regular web browser. Some tools allow users to store all digital workstations on a single portal, providing features such as to-do lists, bulletin boards, graphs, file storage, chat, and progress reports.

Performance appraisal software provides clear evidence of individual contributions, regardless of whether the employee accesses the workplace remotely or on site. By providing direct access to each employee's work, these systems facilitate communication so that each employee stays in touch and provides real-time feedback on performance. This system also allows employees to monitor their progress and determine the shortest path to productivity.

The digital workplace not only provides flexibility, but also benefits employee's focus and collaboration. The digital workplace, from interactive displays to virtual messaging and performance management software, makes workstations accessible, flexible and productive. Such mechanisms are quite useful for management; because thanks to them information about the activities of their organization is available at any time on demand for evaluation and analysis in a format convenient for them[57].

It is worth noting that despite the fact that the digital workplace in this study is considered mainly in terms of the control function, this tool, like all others, has a comprehensive impact on planning, organization, and motivation.

Equally important for understanding the impact of digital transformation on the management of business organizations are the tools that are directly used to carry out certain management tasks. Most of them have already been mentioned above when considering

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[57]Harris-Briggs N. How the Digital Workplace of 2019 Will Affect Performance Management. Training Industry. 2019.
https://trainingindustry.com/blog/performance-management/how-the-digital-workplace-of-2019-will-affect-performance-management/

the impact of digital technologies in general on the management cycle. Among the main digital tools implemented in the management of modern business-organizations are such as digital workplace, digital communication tools, digital document management, digital tools for the accumulation and analysis of information about the activities of the business organization (Table 5).

Table 5 – Digital instruments of business organization management

Digital instruments	Description
Digital workplace	Provides such improvements as an independence from the physical location of employees, flexibility of work, a healthier work-life balance, which has a positive impact on employees' attitude to work and their efficiency.
Digital communication tools	Provide a process of streamlining most of the organizational processes and increase employee productivity; allow employees to communicate effectively, receive information and feedback immediately, and solve problems instantly.
Digital document management	Help business organizations to have easier and faster on-demand access to the necessary documentation, as well as ensure the storage of large amounts of information that can be further used for planning processes.
Digital tools for the accumulation and analysis of information about the activities of the business organization	Provide managers with an information about the activities of the business organization, which is available at any time. It is usually stored for a certain period and can be effectively analyzed and obtained without interfering with the activities of employees.

Source: Formed by author

The introduction of digital tools in the management of a business organization significantly affects its performance, provides the business organization with large amounts of analytical information that can be used at all stages of the managerial cycle and

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transforms the relationship between employees and management by creating more favorable conditions for communication and feedback. Such changes should have a positive impact on the efficiency of both individual employees and the business organization as a whole.

The process of digital transformation has seriously affected the management activities of business organizations not only abroad but also in Ukraine, but in the context of domestic business, this phenomenon has acquired its own specificity. Domestic business organizations often face such challenges as the obsolescence of managerial approaches, the refusal to introduce digital technologies in the management and operational process, the instability of the political and economic environment, which makes it impossible to focus on reorganizing the management structure etc. Often an important factor inhibiting digitalization in the management of business organizations is the mismatch in views and expectations between objects and subjects of management and, as a consequence, the "digital divide" or the "digital gap" in the information subsystem of management. To address this problem, the management of organizations needs to clearly articulate their vision and strategy for the implementation of digital technologies, as well as learn about the views of their subordinates on this issue, through which there should be an adjusted further action plan for digitalization.

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