

Research Paper

Digitization of Business Processes and the Impact on the Interaction of Business Entities

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ABSTRACT

Modern paces of society's information and communication development cause a rapid increase in business requirements in all industries and spheres of business. They induce to technological changes in the construction of business processes, taking into account the main general trends of society's digitalization. The development of information technologies changes the activity models of business organizations, the procedure of adaptation to new conditions and business requirements, which provide for a greater degree of automation and digitalization of business processes and production stages. At this stage of industrial development, a simplification and termination of certain business processes based on using digital technologies and expanding the set of digital tools takes place. The purpose of the academic paper is to study the features and main trends of digitalization in the business environment, as well as to evaluate the effectiveness of various types and forms of electronic interaction of business entities while implementing business processes. In the course of the research, system-structural, comparative, logical-linguistic methods, analysis, synthesis, induction, deduction, abstraction, and idealization were applied to study and process materials in the field of communicative relations in implementing business processes. A questionnaire survey was also used to clarify certain practical aspects of this sphere.

HIGHLIGHTS

- ① The purpose of the academic paper is to study the features and main trends of digitalization in the business environment.
- ② A questionnaire survey was used to clarify certain practical aspects of this sphere.
- ③ It was evaluated the effectiveness of various types and forms of electronic interaction of business entities while implementing business processes.

Keywords: Digital business technologies, information and communication technologies, digital marketing, automation of business processes, business information system, digitalization of the business environment.

The timely adaptation of current business trends and the transition to a digital environment, which enables survival and active participation in challenging competitive environments, are crucial for the business entities' success.

The theoretical part of the present research substantiates the concepts, components and main

features of the interaction of business entities in digitalizing business processes.

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The practical part of the research includes an assessment of digitalization's priority tasks in the business environment for business entities, a gradation of the most common tools of digitalizing business activities, which have gained particular popularity in recent years. It establishes the digitization process' components requiring scientific and software refinement nowadays and the most pronounced trends in the field of business digitalization. At the same time, it reveals the benefits of digitalizing the business environment, which will make digital technologies especially in demand in the future.

Based on the research results, conclusions were made regarding the issues raised. In particular, during the survey, it was found that one of the most significant objectives of digitalizing the business environment for business entities is to increase the speed of processing customers' requests, increase consumers' loyalty, and reduce advertising costs.

Respondents identified the most common tools for digitalizing business activities during the survey. These include using information and communication technologies, automated training and maintenance systems, methods and techniques for analyzing and processing big data, specialized and adapted software products. The survey showed that the digitalization process procedures requiring scientific and software development include the digitalization of standard production processes, monitoring work performance and product quality, as well as logistics and delivery. Among the trends in the field of business digitalization, according to the research participants' standpoints, it is worth highlighting strengthening digital transformation, the integration of marketing activities into the customer's life cycle, the optimization of production processes, the provision of digital applications by smartphone owners. The survey made it possible to establish the main advantages of the digitalization of the business environment, thanks to which digital technologies will be especially in demand in the future. These include provision of surplus product value through quality service, price reduction due to automation of processes and digitization of business processes, increase in quality and number of involved customers.

The issue of establishing business processes has always been quite actively considered by scientists

all over the world. At the same time, the issue of digitalization has been relatively recently arisen in scientific developments in this sphere. Numerous scientists have been considering it as the optimization and improvement of business (Kraus *et al.* 2021).

The presence of a variety of studies on digitalization and its impact on the enterprises' business processes in foreign and domestic science indicates an interest in introducing digital tools into the business sphere and adapting to modern conditions for society development at all levels of management (Savytska & Salabai, 2021). Considered and studied the marketing of works as the main source of new hybrid proposals for the expansion of marketing of goods, works, and services (Pogodayev, S. E., 2013). In particular, scientists consider the company's digitalization as a modern innovative phase of its development, based on integrating physical and digital resources in the sphere of production and consumption. Accordingly, digitalization in this sense is characterized by new methods of generating, processing, storage and transmission of information in all spheres of human activity (Horvathova & Mokrisova, 2022), (Alkaraan *et al.* 2023).

Considering the similarity in the concepts of "informatization", "digital transformation" and "digitalization", some scholars equate these concepts, investigating the prerequisites, tools of influence and consequences of using digital technologies in business (Stalmachova, Chinoracky & Strenitzerova, 2022), (Bouncken, Kraus & Roig-Tierno, 2021).

Currently, the tendency towards digitalization is mainly related to the transformation and penetration of digital technologies into the business sphere to optimize and automate business processes, increase productivity and improve communication interaction with consumers. Scientists also note that introducing such approaches increases the efficiency of the company's activities and creates additional competitive advantages thanks to the operational flexibility of the business. It is considered a new phase of production management development (Hanelt *et al.* 2020), (Adams, Freitas & Fontana, 2019). Ukrainian scientists have developed the main features of sustainable management of

natural resources to ensure strategic ecological development (Koval, V., Mikhno, I., Udovychenko, I., Gordiichuk, Y., & Kalina, I., 2021). A sustainable development management procedure for machine-building enterprises was also developed, which was carried out using a spatial approach to sustainable development (Latysheva, O., Rovenska, V., Smyrnova, I., Nitsenko, V., Balezentis, T., & Streimikiene, D., 2020).

In recent years, domestic scientists have been considering digitalization along with the mandatory automation of business processes using management software to reduce paper documents, manual operations and human errors. In particular, scientists study automation and digitalization of business as simultaneous and interconnected processes. At the same time, automation is mainly aimed at improving existing processes with the help of information technologies. On the other hand, the digitalization of the business environment, is seen as creating and providing new value (usefulness) to consumers, not just to improve what has been already done or offered (Bendig *et al.* 2023).

In general, scientists note that the main challenge in the business organization management sphere in XXI century is the rapid development of the technological revolution, which changes the traditional idea of managing the organization, its personnel and resources with the mandatory use of digital tools (Zoppelletto *et al.* 2023).

The purpose of the research is to determine the standpoint of the companies' managers, whose activities involve using digital technologies, as well as scientists and teachers studying the business environment's digitalization tendencies regarding the features of modern directions of interacting companies using the latest tools and technologies.

MATERIALS AND METHODS

A practical study of modern tendencies in using digital technologies in the business sphere during the interaction of business entities was carried out by surveying 246 companies' managers and 219 teachers and scientists conducting research and teaching activities at 21 higher educational institutions of Sumy, Khmelnytskyi, Zhytomyr and Kyiv Region of Ukraine. The research was conducted using the Survey Planet service.

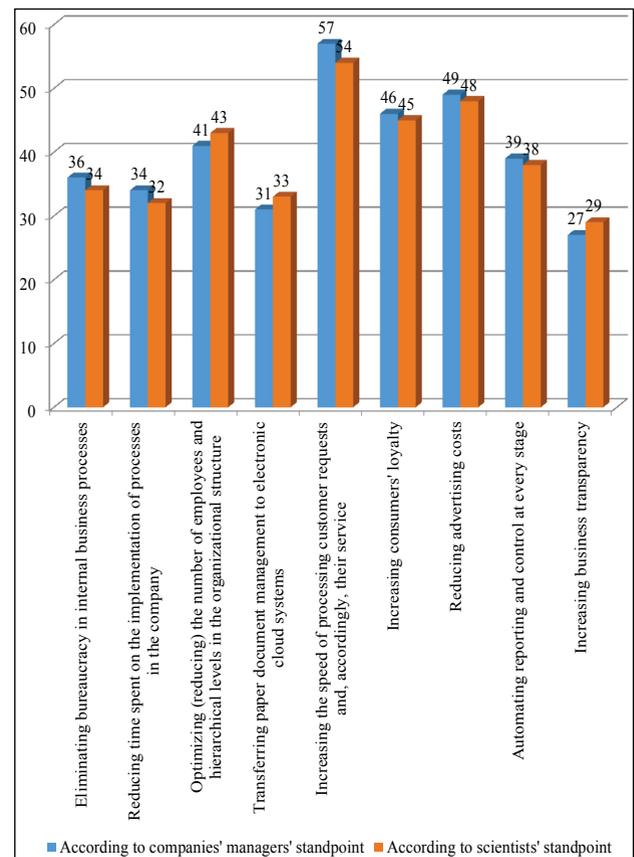
RESULTS

One of the top-priority issues clarified during the survey was prioritizing the digitalization tasks of the business environment for business entities (Fig. 1).

According to the survey participants' standpoint, the use of information technologies in organizing companies' business processes primarily allows to increase the speed of processing customers' requests, increase consumers' loyalty, and reduce advertising costs.

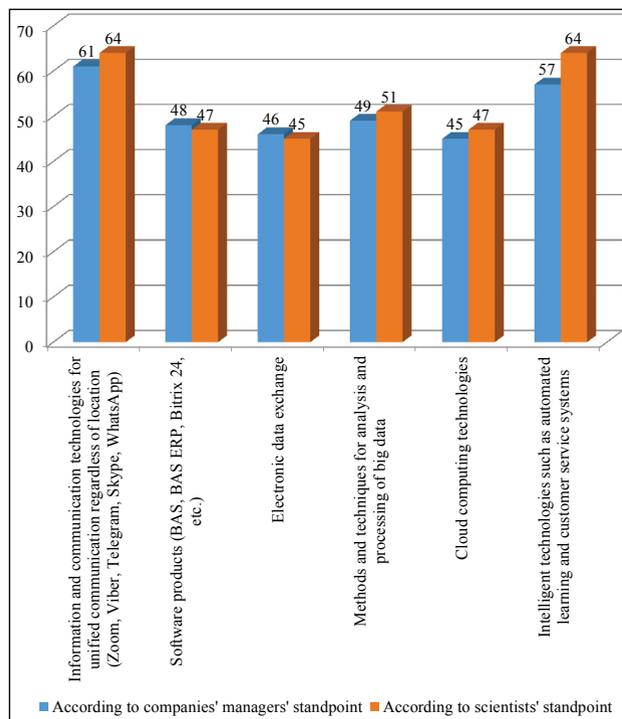
During the survey, the respondents identified the following most common tools for digitalizing business activities (Fig. 2).

It can be observed from Fig. 2 that the manifestation of the digitalization of business processes nowadays is most expressed through using information and communication technologies, automated training and maintenance systems, methods and techniques for analyzing and processing big data, specialized and adapted software products.



Source: Compiled by the authors.

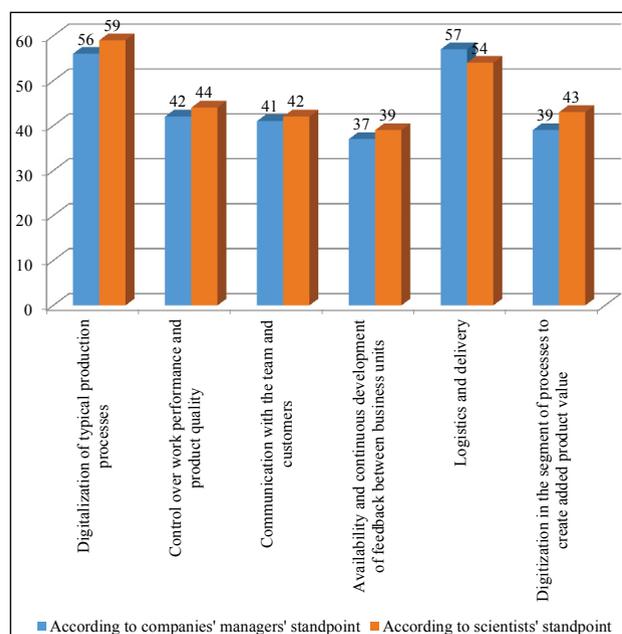
Fig. 1: The priority of digitalization tasks of the business environment for business entities, %



Source: Compiled by the authors

Fig. 2: The most common tools for digitalizing business activities, which have gained particular popularity in recent years, %

The crucial question of the survey was establishing procedures (components of the digitalization process) that most require scientific and software refinement (Fig. 3).

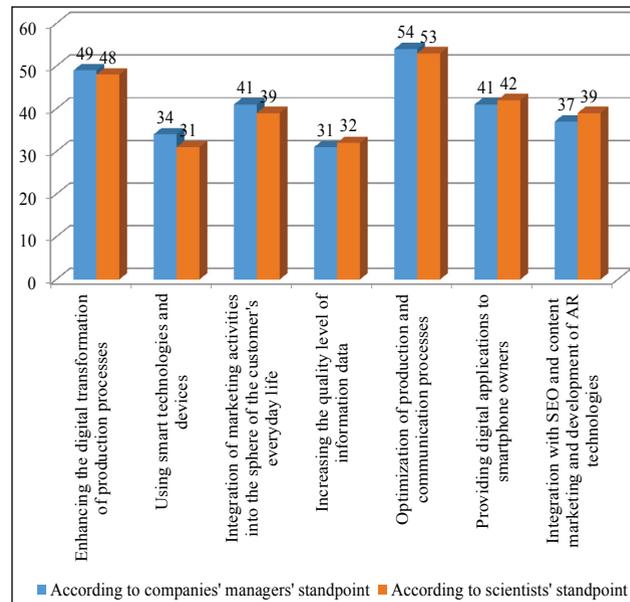


Source: Compiled by the authors

Fig. 3: Components of the digitization process usually most requiring scientific and software refinement, %

According to the survey participants' viewpoint, such components of the digitalization process as digitalizing typical production processes, monitoring over work performance and product quality, as well as logistics and delivery are most in need of improvement.

As the survey has shown, as of the beginning of 2023, the following trends in the sphere of business digitalization turned out to be the most pronounced (Fig. 4).



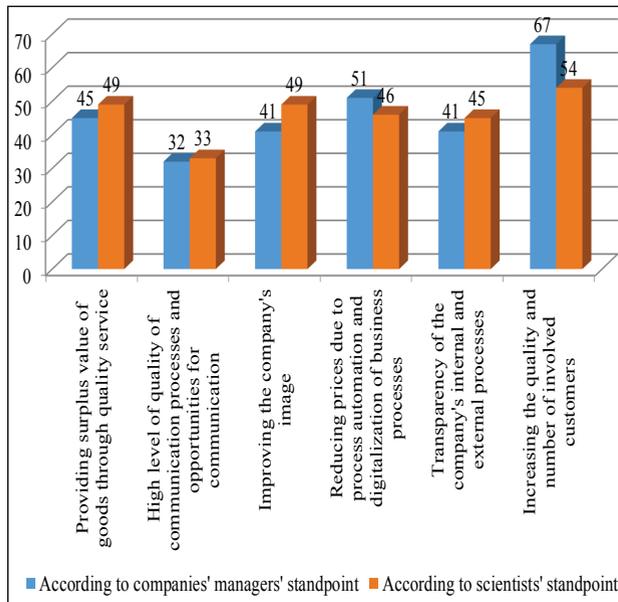
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Fig. 4. The most pronounced trends in the field of business digitalization, %

- ◆ enhancing digital transformation;
- ◆ integration of marketing activities into the customer's life cycle;
- ◆ optimization of production processes;
- ◆ provision of digital applications by smartphone owners.

The respondents also identified the most significant benefits of digitalizing the business environment, thanks to which digital technologies will be especially in demand in the future (Fig. 5).

- ◆ providing surplus value of goods through quality service;
- ◆ reducing prices due to process automation and digitalization of business processes;
- ◆ increasing the quality and number of involved customers.



Source: Compiled by the authors

Fig. 5: The benefits of digitalizing the business environment, thanks to which digital technologies will be especially in demand in the future, %

DISCUSSION

Digitalization of business processes involves using digital tools in the business organization, and not only the digitalization of an array of data (Chatterjee *et al.* 2023).

The need to improve business processes changes priorities in allocating company resources. The implementation of information technologies in the organization of business processes is based on electronic document flow and the transformation of information resources (data) into a means of achieving commercial goals. The purpose of digitalizing business processes is to optimize the available resource potential, working time, increase the efficiency of business processes, and, accordingly, enhance the effectiveness of the company's economic activity (Chen, Despeisse & Johansson, 2020), (Mark *et al.* 2019).

Digital document management tools help business organizations access the necessary documents more easily and quickly. In addition, these tools allow business organizations to store large amounts of information providing some automation of work. They can be used to plan subsequent activities and manage corporate processes after comprehensive analysis (Sousa Jabbour *et al.* 2018), (Nascimento

et al. 2019).

Despite quite significant positive changes in the field of enterprises' digitalization, several unresolved problems remain nowadays, namely: high costs at the early stage of operation of information systems; a relatively complex process of transition to using digital technologies; the lack of professional personnel, related to the disproportion between the demand for highly qualified specialists and the lack of educational institutions for ensuring training, the absence of the necessary unified standards, technical regulations and relevant legislative norms for the interrelationship between participants in the field of digital technologies (Mehrpourya *et al.* 2019).

Considering the above-mentioned problems, scientists note that digitalization does not always lead to an increase in the company's profit. In order to avoid the negative consequences of the process of applying the latest information and communication technologies, it is necessary to eliminate all risks, an important tool for which is the determination of the expected result from informatization and its comparison with the cost of introducing such processes. In addition, difficulties sometimes arise with the implementation of the latest work systems, for as much as well-established business processes may lose their advantages when they are transferred to a digital environment. This leads to errors and changes in the company's activities (Brozzi *et al.* 2020), (Kamble, Gunasekaran & Gawankar, 2018).

The tool for eliminating such problems is a detailed analysis of each specific situation and understanding what phenomena can lead to undesirable results (Dev, Shankar & Qaiser, 2020).

Although digitalization is, to some extent, a universal tool for optimizing business processes, it cannot always be used in the company's activities. After all, sometimes it is impossible to abandon a set of actions that require the employee's personal presence and the availability of paper documents (Moeuf *et al.* 2018).

CONCLUSION

Therefore, the goal of the company's digitalization is to optimize the available resource potential, working time and increase the efficiency of business processes. The analysis of scientific literature on the research topic and the survey results showed

that it is difficult to imagine the activities of companies without using digital technologies nowadays. Informatization and digitization are the main processes used for the transition to the digital environment. Digitalization is a more widely used process, and it has a number of advantages, among which, first of all, is increasing the level of communicative activity, namely, the subject's interaction with counterparties, developers and other objects using information resources.

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