Problems of accounting digitalization in conditions of business processes digitalization

Problemas de la digitalización de la contabilidad en condiciones de digitalización de los procesos

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Abstract

The study of accounting digitalization in the context of business processes digitalization is an actual and modern problem. Methods used: analysis and synthesis, graphic methods, the method of comparisons, the cause-and-effect method. The purpose of the article: the determination of the stages of business processes digitalization, the formation of directions for digitalization of accounting, the identification of opportunities and threats. Tasks of the article: research of modern trends, advantages and disadvantages of digitization; determination of the features of digital technologies introducing; formation of the directions and problems of digitization of accounting. As a result, modern trends, advantages, and disadvantages of digitalization were outlined, its process was built, and the main directions of digitalization of accounting were proposed. The obtained results can be used by business managers to build the process of digitalization and determine further directions of digitalization of accounting. Further

Resumen

El estudio de la digitalización de la contabilidad en el contexto de la digitalización de los procesos empresariales es un problema actual y moderno. Métodos utilizados: análisis y síntesis, métodos gráficos, el método de las comparaciones, el método de causa y efecto. Objetivo del artículo: la determinación de las etapas de la digitalización de los procesos de negocio, la formación de direcciones para la digitalización de la contabilidad, la identificación de oportunidades y amenazas. Tareas del artículo: investigación de las tendencias modernas, ventajas y desventajas de la digitalización; determinación de las características de la introducción de tecnologías digitales; formación de las direcciones y problemas de la digitalización de la contabilidad. Como resultado, se esbozaron las tendencias modernas, las ventajas y desventajas de la digitalización, se construyó su proceso y se propusieron las principales direcciones de la digitalización de la contabilidad. Los resultados obtenidos pueden ser utilizados por los gestores de las empresas para construir el
Introduction

Digitalization's penetration into all areas of life and society is an irreversible process that creates a number of benefits for businesses, but it also creates a long list of challenges. Otherwise, the digitalization of business processes has a direct impact on accounting. The digitalization of accounting involves its transformation from traditional to digital form, which also entails both prospects and disadvantages for businesses. The ability of a business, particularly its accounting, to adapt as quickly as possible to the current trends of digitalization depends on its future market position and existence in general. Therefore, it is relevant to investigate the opportunities, prospects, and challenges of the digitalization of accounting and the digitalization of business processes.

Accounting has evolved in parallel with information technology (Knudsen, 2020), so it can be assumed that this area will adapt to the new realities faster than others. The directions of implementation and development of digitalization of accounting in enterprises are: changes in the accounting system in terms of its methodological elements; application of new digital forms of assets, liabilities, and capital; professional development in accordance with the requirements of digital competencies of accounting personnel (Chyzhevska et al., 2021). The vast opportunities offered by digitalization for accounting are difficult for modern businesses to ignore and not use in their activities. Internet technology can significantly reduce the cost of communication and the transfer and storage of information. Electronic communications allow businesses to expand into new markets, provide ample opportunities to attract customers, significantly save time, and allow them to respond quickly to market fluctuations (Lazebnyk, 2018).

The main barriers to the implementation of digitalization are resistance to change, organizational culture, lack of trust, and the high cost of technology (Vârzaru, 2022). Separately, researchers note cybersecurity risks (Pantelei & Lazari, 2022), as well as the decline in the quality of information and the issue of the reliability of the person involved in its preservation and transmission (Agostino et al., 2021).

Researchers agree that the hope that things will remain more or less as they are now should be considered potentially dangerous. That is, digitalization will affect business processes and accounting, and technologies such as big data analytics, artificial intelligence, blockchain technology, and other advances have the potential to stop any human interference in the audit process. In particular, big data can supplement original accounts and improve the quality of reporting. In the future, artificial intelligence will be able to perform the same audit procedures and judgments as a human colleague (Tiberius & Hirth, 2019).

The process of digitalization of business processes is insufficiently covered and systematized, there is no clarity or consensus in the works of scientists regarding its main stages. There is also little coverage of specific areas of digitalization of accounting.

Thus, the purpose of this article is to define the stages of digitalization of business processes, the formation of directions of digitalization of accounting, and the identification of opportunities and threats that accompany these processes. Achieving these goals requires solving the following tasks:

- Study of current trends, advantages, and disadvantages of the digitalization of business processes for business;
- Defining the peculiarities of the process of implementing digital technologies;
- Formation of the main directions and problems of digitalization of accounting.

Theoretical Framework or Literature Review

The problems of digitalization of accounting and digitalization of business processes, in general,
are developed in their studies by many Ukrainian and foreign researchers. Annarelli et al., (2021) in their work highlight the benefits that companies that have implemented digitalization will provide to their customers. Eller et al., (2020) devote their research entirely to examining the impact of digitalization on small and medium-sized businesses. The researchers identify the peculiarities of digital transformation of such businesses and in the conclusion provide a list of barriers to the successful implementation of digitalization related to the lack of personnel with relevant competencies. Agostino et al., (2021) worry about potential risks along with the benefits of digitalization. Researchers attach great importance to the deterioration of information quality and reliability with the implementation of digitalization and note the importance of the reliability of those responsible for its preservation and transmission. Stefanovova et al., (2020) also focus on the disadvantages of digitalization, including the neglect of human capacity and imperfect legislative enforcement. As you can see from the literature review, the focus of scholars is on the disadvantages of digitalization. But this does not mean that digitalization should be suspended or that businesses would be better off not doing it. Digitalization is a well-recognized necessity, and its benefits are known and obvious. That's why researchers are seeking to improve the efficiency and safety of the process by carefully considering and proposing ways to prevent and minimize the threats and risks of digitalization.

Methodology

As the main scientific methods for the study were selected analysis and synthesis of the scientific literature to determine the theoretical aspects of the issue under study; graphical methods for a visual representation of theoretical information; method of comparison to compare the results of research; causal method to determine the advantages and disadvantages of the aspects under study. The tools used in the research were Smart Art add-in MS Word, used to represent information in the form of drawings, as well as the software Visio to build a flowchart to determine the decision-making process on the digitalization of business and a mind map to identify the main areas of digitalization of accounting.

The complex nature of the study involves its division into stages.

The first stage identifies current trends, advantages, and disadvantages for businesses in terms of implementing digitalization of business processes. The main trends in the development of electronic communications are considered and the advantages and disadvantages of the digitalization of business processes are identified.

The second stage includes the construction of the process of digitalization of business processes and a detailed description of each of the stages. A generalized view of the process of deciding on the digitalization of business processes with its distribution into two alternative directions is offered. The result of deciding on each of the defined directions is analyzed.

The third stage is the identification and analysis of current directions of digitalization of accounting. The main opportunities for the development of accounting through the implementation of digitalization are disclosed. The main threats and barriers associated with this process are outlined.

The final stage of the study contains a comparison of the results obtained with the conclusions of the researchers of the topic. It was found that scientists generally agree on the benefits and necessity of the digitalization process. However, in some papers, there are lists of significant disadvantages.

Results and Discussion

Theoretical aspects of the digitalization of business processes: current trends, advantages, and disadvantages for business

Digitization is an unavoidable process that covers all spheres of life and the functioning of the economy. With the global digital transformation of economies, each individual business unit sooner or later asks the question of digitizing its activities. Failure to digitize a business may result in the loss of customers and counterparties, losses, lost value, reduced competitiveness, and, ultimately, the termination of the business. Entrepreneurial business models are often divided into classic and innovative models. Classical is aimed at maximizing the return on resources, and innovative - the goal of applying all possible innovations in the enterprise, even in the absence of sufficient own resources for their implementation. Such innovations include both the latest financial tools and management models (Iorgachova et al., 2018) and the implementation of information technology. Most often such, when these models are used by the business at the same time because
to implement all possible innovations in the enterprise is impractical and too valuable, and not to implement them at all will lead to the decline of the business. Digitalization of business involves using digital technology to change the business model and provide new opportunities for profit and value creation (Bloomberg, 2018; Gobble, 2018). In other words, digitalization or digitization of business processes involves making a transition from analog to digital. Lozic, J. (2019). The main role in the process of digitalization is played by the development of information technology and means of communication. Information becomes the most valuable resource, and most of the carriers of information tend to be converted into electronic form. This form enhances the possibilities of communication between businesses and their customers, creates new markets and opportunities for restructuring economic processes, in particular the reorganization of business processes. The main trends in the development of electronic communications are: the digitization of business information, doing business over the Internet, minimizing physical limitations through the use of electronic networks, the development of the entire infrastructure of production based on the use of information devices, the transfer of payments into cashless form, access to information about the business, production, and product, etc. for customers. (Laubnyk, 2018). In addition to the obvious advantages of digitalization, there are also a number of significant disadvantages to this process. Figure 1 shows the following disadvantages and advantages of implementing digitalization in the business processes of the enterprise.

**Fig. 1.** Advantages and disadvantages of implementing digitalization in enterprise business processes (built by the author for (Kraus et al., 2021; Rooksby, 2018))

Figure 1 shows the risks of digitalization at the individual business entity level. If we consider the risks and threats of digitalization at the global level, we can identify many more disadvantages of this process. These are mainly social disadvantages, but they will have an impact not only on society but also on national economies. In particular, such disadvantages can include the so-called “Internet addiction”, degradation of the population through the ability to find any information with the help of gadgets, deterioration of mental health due to the revision of inappropriate content, increasing income differences between the population, loss of jobs due to replacement of human labor with automation increased control of the state over the costs, income, movement, and its citizens, the risk of personal information, transfer of decision-making responsibility to machines, and so on. (Khandii, 2019). It should be noted that with the
globalization of all processes and activities in people's lives, all of these disadvantages will have an indirect and perhaps prolonged but weighty impact on businesses. In contrast to the disadvantages of the introduction of digitalization, this process has a number of positive effects, in particular, increasing the commitment of users, for whom it is more convenient to access information about the business, increasing the possibility of buying goods and services by ordering them at any time via the Internet, etc. Through the Internet, it is possible to create a positive image, conduct marketing campaigns. Digitalization of document flow, production, and other processes, when skillfully applied, contributes to cost reduction (from saving office materials to speeding up the production process by times, saving significant amounts of electricity, reducing manual labor, etc.). Processing, storage, and operation of even the most significant volume of information becomes fast and convenient. All these factors increase the competitiveness and efficiency of the business.

**Peculiarities of the process of implementation of digital technologies**

The process of digitalization in the enterprise, as mentioned above, should be continuous, but it also has stages, which can be cyclical if new innovations need to be introduced. The three main stages of such a process are shown in Figure 2.

![Fig. 2. Stages of implementation of digitalization (built by the author for (Husieva & Lehominova, 2018))](image)

The first stage involves a detailed analysis of the business activities, goals, and objectives of digitalization and the development of an appropriate strategy. This stage contains the analysis of all business processes and assets of the subject of entrepreneurship. The purpose of this analysis is to identify the amount of lost value, to determine the effectiveness of each department, the efficiency of production, communications. The analysis should make it possible to evaluate the strategic result of the introduction of digitalization, to develop, implement and be able to adjust the appropriate strategy. The second stage, in which the direct implementation of digitalization technologies takes place, involves the selection and use of appropriate digital tools. Their implementation is accompanied by digital experiments that aim at progressive, consumer-oriented development and the expansion of innovation potential. For example, one of these tools is the use of low-code platforms that allow rapid creation, customization, and adjustment of experimental systems and applications.

The third step is to analyze the effectiveness of the results in detail. This includes analysis of the effectiveness of solutions for the digitalization of the business, analysis of statistics on the change in profits through the implementation of digital tools, etc. Based on the results of the analysis, conclusions are made regarding the directions of further implementation of digitalization measures (Husieva & Lehominova, 2018).

In addition to the generalized stages of digitalization implementation, each business should develop a detailed step-by-step process for the implementation of digital technologies that meets the needs and characteristics of the business. Based on this process, the organization's overall strategy will be developed. Such a process can be built again with the help of modern digital tools. Such tools include software that can be used to create, for example, roadmaps, “goal trees,” other schemes and processes. As a generalized example of the process of implementation of digital technologies at an enterprise, Figure 3 shows a flowchart of decision-making on digital business transformation.
Understanding the need for digitalization of business

Conducting thorough research and implementing technological developments

The decision to implement digitalization

Engineering, reengineering of business processes

Process automation, computerization of departments

Information of economic calculations

Platformization of technologies and tools

New business models completing a digital transformation

Figure 3. Decision-making block diagram for digital business transformation (developed by the author for (Szalavetz, 2019))

Figure 3 shows that the process of digitalization of business begins with an idea, which in this particular case is understood as the need to implement digitalization activities.

The next step should be an analysis associated with research, technological development, aimed at determining the feasibility, necessity, the main directions of digitalization. Based on the results of the analysis, a decision should be made to implement digitalization. In the case of the decision to refuse digitalization, to continue to function without change, focusing only on maximizing the return on resources, the result may be a significant lagging behind competitors in the industry, using the latest digital technology, inadequate market requirements, inability to satisfy counterparts and users, losses and, eventually, termination of activities. However, if the decision to digitalize can be much more positive, for example, lead to the emergence of new digital technologies. However, such an outcome is preceded by a complex process of digitalization, which can be summarized in terms of the following stages: engineering and re-engineering of business processes, automation of business processes, computerization of all departments, informatization of economic calculations, platform technology and tools, development of new business models and final transformations.

Digitalization of accounting: main directions and problems

The digital economy envisages the following areas of change in accounting in the context of the digitalization of business processes: expanding the ability to reflect the scope of business activities in accounting, developing approaches to integrate different types of accounting, accelerating accounting, improving the way accounting information is accumulated and stored, making it convenient and safe to transmit to interested parties, etc. Such changes can be realized by applying the latest information technologies, in particular, cloud technologies, technological platforms, electronic information systems, the international standard of financial reporting XBRL, etc. (Yershova, 2020).

The systematized priority areas of digitalization of accounting in the context of the digitalization of business processes can be represented in the form of an intelligence map (Fig. 4).
As can be seen in Figure 4, the priorities of digitalization of accounting in the context of the digitalization of business processes are defined as new ways of processing information, the allocation of new accounting objects and means of their evaluation in the accounting system, the inclusion of non-financial information in the accounting system, and the introduction of modern information technology in business processes through programs, platforms, standards, etc.

The problems of improving the accounting system based on digitalization are concentrated around providing the organization with personnel of appropriate qualifications with the necessary competencies, skills, and experience, the preciousness of acquiring, implementing, and using innovative technologies, the time, money, and labor costs of conducting a full business transformation and transferring it to digital standards, as well as conducting appropriate preliminary analysis, analysis of the process of implementing digitalization measures.

Such problems are solved through competent strategic management, engagement of highly qualified employees, calculation of business needs for digitalization tools, and appropriate determination of real possibilities of their implementation.

Discussion

The study concludes that digitalization is necessary for any enterprise. The digitalization process should be deliberate and gradual, taking into account all the needs and opportunities of the business. This involves coordinating the stages of the digitalization process, constant analysis, evaluation of results and prospects, determining the priorities of digitalization, focus on the consumer, as well as a thorough assessment of the threats and risks of the process. Ukrainian and foreign researchers pay much attention to the process and consequences of digital transformation. The works of foreign researchers point out that the extended possibilities of digitalization can provide room for new functions, increased reliability, efficiency, and optimization opportunities, exponentially increasing the value that companies bring to customers (Annarelli et al., 2021). These and other benefits, also identified in the current study, allow us to confirm that the digitalization process can be characterized as non-alternative and necessary for businesses. The advantages of such a process are quite obvious, so scientists often focus on the disadvantages of this process and ways to minimize them. Thus, Korobka (2021) identifies the following disadvantages of digitalization: difficulty in determining the exact result, benefits may be temporary, lack of specialists with appropriate qualifications. The researcher refers to the advantages of digitalization as: the location of users, a positive image, cost reduction, convenient processing of...
large amounts of information, high competitiveness. The advantages highlighted by the scientist generally coincide with those identified in the study, but the disadvantages outlined are contradictory. These disadvantages, firstly, relate to the micro level, that is, the disadvantages at the level of functioning of an individual business entity. Secondly, such shortcomings with experienced management are not only easy to eliminate, but it is possible to prevent them at all. Regarding the shortage of specialists of appropriate qualifications, it can be noted that information technology is developing very rapidly, and in the near future, there will be more and more such specialists. In addition, large companies can introduce internships to train specialists in accordance with the requirements of a particular business. The disadvantage of the relatively temporary nature of the benefits can play a significant role if digitalization measures are introduced once and the business process is not actually changed in the future. However, digitalization is an ongoing, constantly evolving process, so the enterprise should also operate a permanent system of analysis of prospects and opportunities for the implementation of new digitalization measures. Thus, in the case of the implementation of digitalization permanently, we cannot talk about the temporary nature of the benefits. Regarding the severity in determining the exact result - this statement is also contradictory because if there are specialists with the appropriate qualifications it is quite possible to predict a fairly accurate result of the introduction of digitalization measures. Small and medium-sized businesses play an important role in the digitalization of businesses as the most adaptive, flexible, and innovative enterprises. Therefore, separate studies are devoted to identifying barriers to digitalization for small and medium-sized businesses. Transformation of the business model for such businesses is complex and requires investment and the necessary related skills. Even though business owners and managers recognize the value of strategy, the daily routine of business operations leads them to try to avoid strategic planning. Digitalization supports specific core competencies, which leads to greater financial efficiency. However, the challenge remains for small and medium-sized businesses to hire employees with the necessary skills; this will continue to be a significant obstacle to their successful digitalization (Eller et al., 2020). In some studies, the consequences of the digitalization of accounting are not primarily related to the convenience of accumulating, storing, and transmitting information, but to the quality and reliability of such information, in particular the reliability of those responsible for storing and transmitting it. The risks associated with these factors are among the key threats posed by the digitalization of accounting (Agostino et al., 2021). Some researchers add the following items to the list of disadvantages: the need for a significant time to convert business documents, conservatism, rapid technological progress, insufficient legal regulation, a certain disregard for human capacity, duplication (Stefanovova et al., 2020). Most of the above disadvantages were considered in the article, but insufficient legal regulation remains an unexplored aspect. It should be agreed that the legal support for the digitalization of accounting is in its developmental stage and remains imperfect at the moment. Therefore, the prospects for further research should be a detailed study of the current legal support for the digitalization of accounting and the development of recommendations for its improvement.

Conclusions

The study identified the main trends in the digitalization of business processes, including the digitization of business information, doing business over the Internet, the use of electronic networks, the use of information devices in production, cashless payments, increased access and awareness of customers on business. The advantages and disadvantages of the digitalization of business processes are defined. The undoubted advantages are simplification and reduction of time for processing documents, the acceleration of all processes, particularly production, cost savings, creating a positive image, expanding the customer base, etc. The main disadvantages are the increased risks of cybersecurity breaches, the risk of defamation, the threat to the confidentiality of information. The article proposed a process for the digitalization of business processes, consisting of a preliminary analysis of needs and resources, strategy development, setting goals and objectives, direct implementation of digitalization, and evaluation of the results. The study details this process and reveals the content of each of its components. In addition, the main directions of digitalization of accounting are defined and systematized. The benefits that digitalization will provide are identified, and the main obstacles to successful digitalization are given, one of which is the problem of finding highly qualified personnel with the appropriate skills. Possible solutions to the problems are suggested.
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