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## **Analysis of the dilemmas of building an accounting system for the needs of future economic management**

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**Abstract:** Accounting is a traditional activity whose ways of doing things have been well-established and relatively unchanged over a long period of time. However, the present requires the accounting system to respond to rapid changes in the economic environment of companies, on the timeliness and efficiency of the response to which its future will depend. These include the digitalization of the economy, the development of the concepts of sustainable development and regional economic sustainability, functioning under the permanent action of various crisis phenomena. Thus, the purpose of this article is to investigate the impact of current and future changes in the economic environment on the accounting system, as well as to identify areas for further development of the system of effective economic management. In the process of research, the following scientific methods were used: analysis and synthesis, economic and statistical analysis, the method of establishing cause-effect relationships. The result of the study was identified a number of factors generating both new opportunities for the accounting system of companies and threats to their activities. For each of the identified factors, opportunities and prospects revealed for the accounting system were considered, and the portrait of the accountant of the future for effective management of the economy was determined. In addition to the prospects and opportunities, a number of threats have been identified that companies may face if they do not respond effectively to today's challenges. An area for further research should be the study of the interdependence of the accounting system and regional economic sustainability.

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**Keywords:** accounting system, the economy of the future, management, digitalization, sustainable development, economic sustainability, globalization, integration.

## Introduction

Accounting is a traditional profession with an ancient history and long-standing traditions and ways of doing things. Recently, however, the world economy has undergone significant changes due to globalization, increased control, and the impact of technological progress. The new economic environment offers a wide range of opportunities to the accounting system, but at the same time, it faces a number of serious challenges to which each business unit must respond accordingly and in a timely manner or, sooner or later, suffer significant losses due to imperfect organization of business processes.

### *Research Problem*

The ways of organizing the accounting system, which have been proven over the years, must now be reconsidered through the prism of recent changes in the global economic system. These changes include the introduction of Industry 4.0, associated with the active use of innovation, the concept of sustainable development, the emergence of new and development of previous crisis phenomena and the actualization of the concept of economic sustainability. The opportunities that these changes provide for the accounting system do not exclude a number of barriers to the application of the benefits of such changes and the risks associated with their introduction.

### *Research Focus*

The focus of this study is to examine the impact of current changes in the economic environment on the accounting system in the context of the following key components:

- determining the impact of digitalization on the accounting system;
- changes in the functioning of the accounting system in conditions of sustainable development;
- assessing the impact of crisis phenomena of different origins on the accounting system and its relationship to economic sustainability.

### *Research Aim and Research Questions*

Thus, the purpose of this article is to study the impact of current and future changes in the economic environment on the accounting system, as well as to identify directions for further development of the system of effective economic management. Achievement of the objectives requires solving the following tasks: studying the impact of recent changes in the economic environment on the accounting system; predicting further development of the system in relation to certain changes; revealing ways to adapt the system to current and future challenges.

## Literature review

The literature review for this article is primarily aimed at identifying current economic trends and changes concerning the organization of the accounting system. Thus, the problems of the digitalization of accounting along with the impact of Industry 4.0 on the accounting system and the application of innovative technologies in the field have been investigated by Knudsen (2020), who studied the impact of digitalization on practical accounting. Gulin et al. (2019) reveal the essence of the main technological

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solutions in the digitalization of accounting. These solutions include: artificial intelligence, blockchain technology, continuous audit technologies, and Big Data. Cagle (2020) examines the impact of Industry 4.0 implementation on organizations' financial statements and financial performance.

Bebbington et al. (2017) identify the challenges posed by the accounting system in relation to its direction toward achieving sustainability goals. Akimova et al. (2019) explore the emergence of new accounting objects (intellectual, social capital) and accounting types (environmental, social) in the context of the development of the concept of sustainable development.

Pavlatos and Kostakis (2018) examine the impact of the economic crisis on accounting and accounting innovation. Lehenchuk et al. (2019) explore accounting in the context of the transformation of the external environment of the accounting system as a whole, which is characterized by the introduction of new technologies, the emergence of socio-environmental externalities, the increase in the value of intellectual capital and related crisis phenomena. Gong et al. (2020) explore the functioning of the economy in crisis and reveal the concept of regional economic sustainability.

## **Research Methodology**

### *General Background*

The following scientific methods of analysis and synthesis - to determine the most significant factors affecting the development of the accounting system in the future, economic and statistical analysis - to assess the trends of the studied indicators, the method of establishing cause-effect relationships - to determine the relationship between the accounting system and certain factors were used in the research.

The information base of the article is the scientific literature and statistical data on the emergence and development of new factors of influence on the accounting system. According to the definition of the three main areas of such factors, the study is distributed accordingly into three consecutive stages.

The first stage identifies the impact of digitalization on the accounting system. It summarizes the identified opportunities that digitalization offers to the system and focuses on the main barriers and obstacles that companies face in the implementation of digitalization. The second stage identifies the impact of the concept of sustainable development on the accounting system because of the need to harmonize its objectives with accounting activities. The third stage characterizes the challenges facing accounting in the face of various crisis phenomena and focuses on the need to investigate the relationship between accounting and regional economic sustainability.

### *Sample / Participants / Group*

The study used data from a survey conducted by Chartered Global Management Accountants and the Association of International Certified Professional Accountants (CGMA & AICPA) among managers of a sample of leading companies, as well as data which is publicly available on the official website of the World Bank Data.

## **Research Results**

### **Determining the impact of digitalization on the accounting system**

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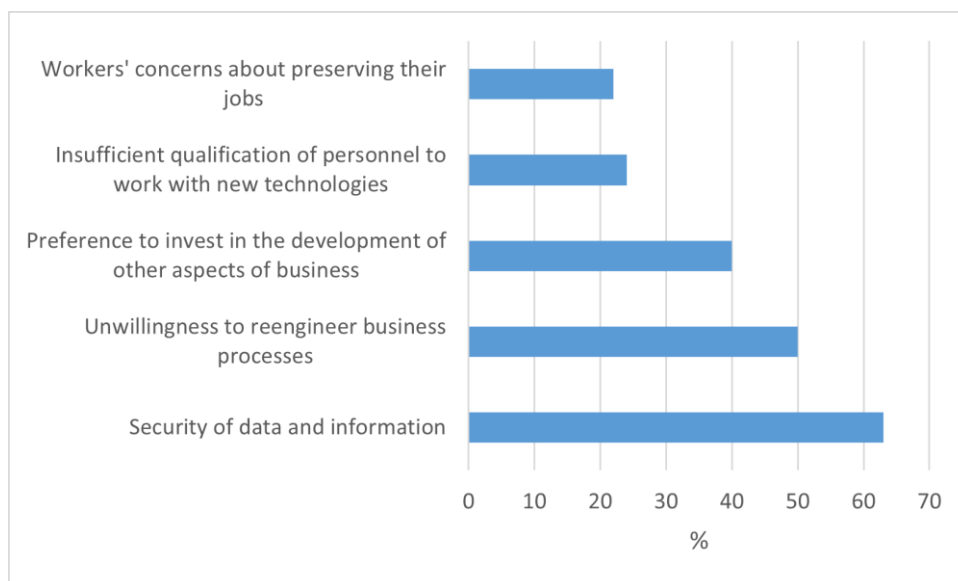
The accounting system is significantly affected by globalization processes, not least because it is associated with the operation of significant amounts of information. Nowadays, information is the most valuable resource, which means that its experienced use, storage, and transfer are the primary tasks of any company. The accumulation of large amounts of information of different nature leads to the need to optimize its handling, in which an important role played by the latest technologies.

About such innovative technologies as Big Data, blockchain, cloud technology, etc., and their application in the accounting system is written a lot of studies by Ukrainian and other scientists of the world. In the context of this study, it is advisable to pay special attention to what dilemmas appear before the management of companies and employees in view of the use of new technologies, in particular, how they will affect the management system in the future.

According to a survey conducted by Chartered Global Management Accountants and the Association of International Certified Professional Accountants (CGMA & AICPA) among managers of a sample of leading companies, the main barriers to the implementation of digitalization in accounting are shown in Figure 1 problems.

**Figure 1**

*The main barriers to the introduction of digitalization in accounting*



*(Constructed by the author for («Agile finance unleashed: the key traits of digital finance leaders», 2019)*

As seen in Figure 1, most CEOs are concerned about data and information security. This is because the digitization and further management of information is associated with increased cybersecurity risks. However, the hiring of highly skilled personnel specializing in Internet security technology can offset these threats. At the same time, the risks associated with the preservation and transmission of information in traditional form, as well as the risks of accidental data loss will be reduced.

In second place among the barriers is the reluctance of management to reengineer business processes because of the additional financial costs and duration of the process. Also, a significant barrier is management's preference for investing in other activities, such as investing in customer service.

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However, these barriers are insufficiently justified, because failure to implement digitalization could result in a significant under-recovery of potential benefits (e.g., in cost savings for reduced business process duration) and the loss of customers who prefer the service convenience that digitalization can provide.

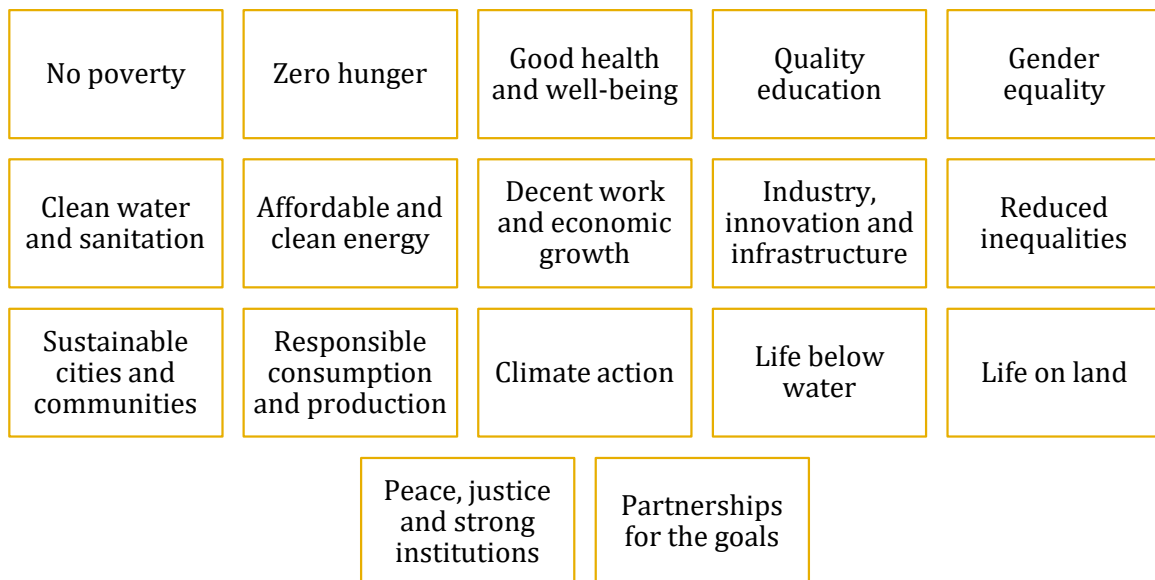
The fourth and fifth barriers relate to the lack of qualifications or skills of staff to work with new technologies, as well as workers' fears of job loss due to the replacement of human labor with jobs. Such barriers, according to the author, are basic given the real risk of workers being laid off through the transfer of their functions to automated systems. However, it should be noted that the accounting profession remains in demand, although the requirements for professionals will change in line with current trends. That is, today an accountant must possess not only the traditional qualifications of this profession but also be knowledgeable in the use of Internet technologies, the latest accounting methods, etc.

### Changes in the functioning of the accounting system in the context of sustainable development

Beginning with a consideration of how the concept of sustainable development affects the accounting system, it is necessary to outline the UN sustainable development goals themselves (Fig. 2).

**Figure 2**

*UN Sustainable Development Goals*



As can be noted from Figure 2, not all of the sustainability goals are directly related to the functioning of the accounting system. However, a closer look at the list reveals some of the goals that have a direct and significant impact on the accounting system. For example, the goal of “quality education” in the context of the accounting system must take into account the need to develop new skills in future accountants. Most of these skills are related to the increased use of the latest technology in accounting, as described in the previous section of the study. In addition, the goal of “industry,

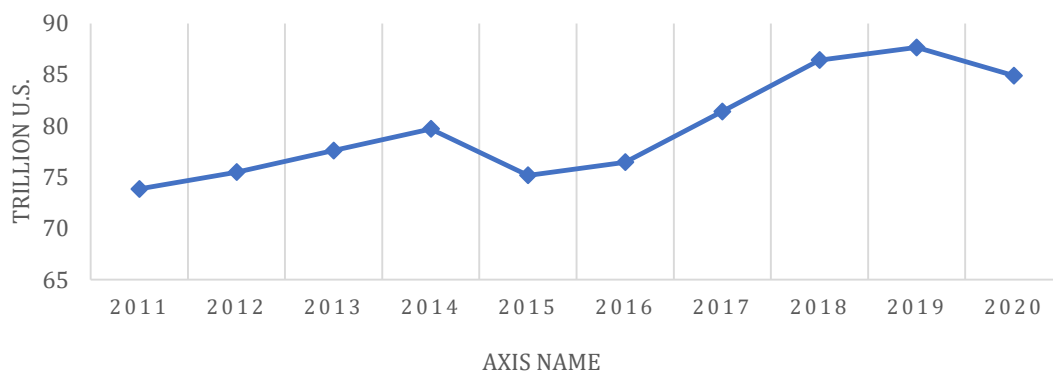
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innovation, and infrastructure” is directly related to accounting. Other goals can influence the development and organization of accounting, especially in the context of the emergence of new concepts such as social and environmental accounting. These types of accounting address, among other things, environmental and social issues. For example, among the tasks of environmental accounting a company has among its tasks is to determine the impact of the organization's activities on the environment. Under the conditions of worsening climate and environmental problems and increasing social tensions, such areas of accounting are becoming increasingly relevant.

### **Assessment of the impact of crisis phenomena of different origin on the accounting system and its connection with economic sustainability**

Recent decades have been characterized by the development of existing crises as well as by the emergence of new threats. One of the most urgent crises is the COVID-19 pandemic, the consequences of which are still being experienced by both society and the world's economic systems. Figure 3 shows a significant decrease in global GDP by the end of 2020.

**Figure 3**



*World GDP from 2011 to 2020*

compiled by the author (World Bank Data, 2021)

Major shocks such as COVID-19 affect both the economy as a whole and its individual units and systems. Thus, the accounting system has also faced the consequences of the crisis, related to the need to work remotely (if possible), to reduce costs, to harmonize expenses and investments, to make additional expenses due to the effects of the crisis.

Due to the aggravation of crisis phenomena, the concept of economic sustainability, in particular the economic sustainability of regions, which consists in the ability of systems to withstand crisis phenomena, to recover from them, and to use post-crisis opportunities for further development and improvement, has recently been actualized. In this connection, the accounting system should not only be prepared for crisis phenomena but also should function stably during the crisis and after it through effective organization of activity, implementation of experienced investment policy, competent cost management.

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It should be noted that all the above trends of the accounting system increasingly integrate it with other systems in the organization and outside it. This means that the accounting system cannot function in isolation and concentrate only on the reflection of the financial aspects of the company, and its work must be based on cooperation with other departments and levels of management of the organization. Also, specialists in Internet technology, business analysts, environmental workers, etc. may be involved in the process of improving the accounting system.

## Discussion

Thus, in today's business environment, the accountant must not only have the traditional skills inherent in this profession but also be aware of digital technologies, in the field of achieving sustainable development goals, in particular ecology, as well as have the abilities of an anti-crisis manager. Such findings are reflected in the works of scholars. Yes, Gulin et al (2019) stresses the necessity, non-alternative, and numerous benefits of digitalization in the accounting system today and in the future. Also, the researcher, as in this article, focuses on the issue of the necessity of the accounting profession even with the automation of most business processes. The scholar notes that, despite a number of advantages of digitalization, artificial intelligence and automation will not be able to perform the most important functions of an accountant – interpretation, and analysis of financial information. Thus, in the near future, the accounting profession is not threatened by extinction. The researcher also predicts that digitalization should increase the cost of services and their efficiency, with accountants having more time to analyze the future needs of clients.

Akimova et al. (2019) explore in detail the relationship between the concept of sustainability and the coming changes in accounting. Researchers note the need to improve the quality of education not only for future accountants but also for those who are already employed as accountants. In addition, the researchers note the importance of accounting in the development of infrastructure and reveals the need for the introduction of integrated reporting.

Lehenchuk et al. (2019) view accounting as a science that examines the relationships that arise between social groups and members of society regarding their use and impact of the information produced in the accounting system. According to this approach, accounting, on the one hand, is a product of the social environment and, on the other hand, influences the process of shaping that environment. Accounting should be considered not just as a tool for reflecting the economic reality of the enterprise, but as a tool for shaping social processes. This approach coincides with the view expressed in this article that the accounting system cannot function in isolation but is an integral part of social and economic processes.

Gong et al. (2020) examine the functioning of the economy under crisis phenomena, in particular the COVID-19 pandemic, and reveal the essence of the concept of regional economic sustainability. In the economic literature, the issue of the relationship of accounting with the sustainability of both regions and individual economic units has not been sufficiently investigated. However, according to the author of the article, the effective organization of the accounting system has a direct impact on economic and regional sustainability. Therefore, the study of the relationship between the accounting system and regional economic sustainability should be the direction of further scientific research.

## Conclusions and Implications

The study identified the main factors that have an impact on the present and future of the accounting system. Such factors can create both threats to the system and reveal new opportunities. The main of these factors, based on a review of the literature and our own research, include: the

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digitalization of the accounting system, the alignment of sustainable development goals with the activities of accountants, the functioning of the accounting system in times of crisis, and the concept of economic sustainability. Whether these factors will bring benefits to the company or become a source of threats depends, not least, on the effectiveness of the organization of the accounting system, as well as the qualifications of accountants. Thus, the arsenal of knowledge of a modern accountant should contain not only the traditional skills of this profession but also awareness of the introduction and use of the latest technologies in the accounting system, knowledge about the harmonization of company activities with the goals of sustainable development, as well as certain skills of an anti-crisis manager.

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