

V. Holovachko,
*PhD in Economics, Associate Professor,
Associate Professor at the Department of Accounting, Taxation and Marketing,
Mukachevo State University, Mukachevo, Ukraine*
ORCID ID: <https://orcid.org/0000-0002-5993-0873>

Y. Kozar,
*Second (master's) level of higher education, specialty D1 "Accounting and taxation",
Mukachevo State University*
ORCID ID: <https://orcid.org/0009-0009-2770-2399>

M. Berets,
*second (master's) level of higher education,
Specialty D1 "Accounting and taxation", Mukachevo State University*
ORCID ID: <https://orcid.org/0009-0001-8769-9277>

DOI: 10.32702/2306-6814.2025.11.177

CURRENT REALITIES OF ACCOUNTING AND AUDIT DIGITALIZATION: METHODOLOGY AND SOFTWARE

В. М. Головачко,
к. е. н., доцент кафедри обліку і оподаткування та маркетингу,
Мукачівський державний університет
Я. В. Козар,
здобувач другого (магістерського) рівня вищої освіти,
спеціальність D1 "Облік і оподаткування", Мукачівський державний університет
М. М. Берец,
здобувач другого (магістерського) рівня вищої освіти,
спеціальність D1 "Облік і оподаткування", Мукачівський державний університет

СУЧАСНІ РЕАЛІЇ ЦИФРОВІЗАЦІЇ БУХГАЛТЕРСЬКОГО ОБЛІКУ ТА АУДИТУ:
МЕТОДИКА ТА ПРОГРАМНЕ ЗАБЕЗПЕЧЕННЯ

Digitalization has penetrated all spheres of economic activity and transformed traditional approaches to conducting entrepreneurial, commercial, or any other type of activity. It has been noted that the most significant changes have occurred in accounting and auditing, ensuring transparency and efficiency in the financial and economic activities of business entities. It has been proven that the digitalization process of accounting and auditing covers the entire cycle — from the initial recording of business transactions to the independent evaluation of financial statements — guided by key steps that form a comprehensive methodology for this process. In particular, the key steps include: the first step — analyzing the current state of accounting and auditing, which allows for a clear identification of the strengths and weaknesses of existing processes and the formulation of digitalization goals; the second — selecting appropriate software and technologies that provide optimal solutions for automating and enhancing the accuracy of accounting processes; the third — developing a detailed implementation plan and preparing the necessary infrastructure to support digital technologies. In addition, the implementation and configuration of software, staff training, as well as thorough testing and pilot operation of the system play a significant role in the digitalization

process, as they ensure the effectiveness and stability of these systems under real-world conditions. The final stage is the full-scale implementation and continuous system performance monitoring, which ensures the uninterrupted operation of accounting and auditing processes based on digital technologies. Thus, the correct sequence of steps, clear planning, and effective implementation of the digitalization methodology form the foundation for improving the efficiency, transparency, and accuracy of accounting and auditing processes in the modern digital economy. The prospects for further research lie in an in-depth study of the effectiveness of implemented digital solutions, the assessment of their impact on the quality of accounting and audit information, as well as the development of innovative models for integrating accounting systems with artificial intelligence and data analytics technologies.

Цифровізація проникла в усі сфери економічної діяльності та трансформувала традиційні підходи до ведення підприємницької, комерційної та інших видів діяльності. Констатовано, що найбільших змін зазнали бухгалтерський облік і аудит, зокрема в контексті забезпечення прозорості та ефективності фінансово-господарської діяльності суб'єктів господарювання. Доведено, що процес цифровізації бухгалтерського обліку та аудиту охоплює весь цикл — від первинної фіксації господарських операцій до незалежної оцінки фінансової звітності, і скеровується ключовими етапами, які становлять комплексну методику цього процесу. Зокрема, важливими кроками є: перший — аналіз поточного стану обліку та аудиту, що дозволяє чітко визначити сильні та слабкі сторони чинних процесів і сформулювати цілі цифровізації; другий — вибір відповідного програмного забезпечення та технологій, що забезпечують оптимальні рішення для автоматизації та підвищення точності облікових процесів; третій — розробка детального плану впровадження та підготовка необхідної інфраструктури для підтримки цифрових технологій. Окрім того, значну роль у процесі цифровізації відіграють етапи впровадження та налаштування програмного забезпечення, навчання персоналу, а також ретельне тестування та дослідна експлуатація систем, що дозволяють гарантувати їхню ефективність і стабільність у реальних умовах. Завершальним етапом є повномасштабне впровадження та постійний моніторинг роботи систем, що забезпечують безперебійний процес обліку та аудиту на основі цифрових технологій. Таким чином, правильна послідовність кроків, чітке планування та ефективна реалізація методики цифровізації є основою для підвищення ефективності, прозорості та точності процесів бухгалтерського обліку та аудиту в умовах сучасної цифрової економіки. Перспективи подальших досліджень полягають у поглибленому вивченні ефективності впроваджених цифрових рішень, оцінці їхнього впливу на якість облікової та аудиторської інформації, а також у розробці інноваційних моделей інтеграції облікових систем із технологіями штучного інтелекту та аналітики даних.

Key words: automation solutions; improving the accuracy of accounting processes; recording of business transactions; independent evaluation; financial reporting; accounting; audit.

Ключові слова: рішення для автоматизації; підвищення точності облікових процесів; фіксація господарських операцій; незалежна оцінка; фінансова звітність; бухгалтерський облік; аудит.

PROBLEM STATEMENT

Digitization has permeated all areas of economic activity and has transformed traditional approaches to conducting entrepreneurial, commercial, or any other type of activity. It has been noted that the most significant changes have occurred in accounting and auditing, particularly in ensuring transparency and efficiency in the financial and economic activities of business entities. First and foremost, modern enterprises generate enormous volumes of financial and non-financial information. Manually processing and analyzing this data is highly labor-intensive, inefficient, and susceptible to errors. In contrast,

digital tools make it possible to automate the collection, systematization, and processing of this data, significantly increasing the speed and accuracy of accounting processes. Moreover, regulatory authorities, investors, and other stakeholders are imposing increasingly strict requirements for transparency in financial reporting and corporate accountability. Digital technologies can significantly enhance the level of transparency and ensure the immutability of accounting data. Finally, accounting and auditing involve a substantial number of routine and repetitive tasks, such as entering primary documents, reconciling data, and generating standard reports.

Automating these processes through specialized software allows accountants and auditors to focus on more analytical and strategic tasks. Digital tools are increasingly empowering auditors and accountants to conduct deeper and more comprehensive analyses of financial information, as well as to collect and process real-time data more effectively. In this context, the active implementation of information technologies, the development of specialized software, and new methodological approaches necessitate a deep reflection on the current realities of the digital transformation of accounting and auditing.

ANALYSIS OF RESEARCH AND PUBLICATIONS

The issues of digitizing accounting and auditing have been explored in the scientific works of authors such as Korol S.Y., Klochko A.O. [2], Eershova N. [1], Spilnyk P., Zabygaylo V., and Zabygaylo A. [5]. In their works, they emphasize the key challenges of digital transformation: the mismatch between the legislative framework and the pace of digitization, the low level of technical preparedness of personnel, limited financial resources for implementing modern software, and the risks associated with information security and data protection. Some authors (in particular, Putsenteylo P.R., Dovbush A.V. [3]) also highlight the difficulties of integrating the latest digital solutions with existing accounting systems and the challenges of adapting employees to the new conditions of accounting practices.

Despite the existence of some theoretical and applied studies, the current state of digital transformation in the field of accounting and auditing remains insufficiently explored. The scientific literature lacks a comprehensive view of the digitization methodology, considering phased implementation and potential integration with other digital platforms. This creates a need for further research aimed at a comprehensive understanding of digital transformation in the accounting and auditing field.

FORMULATION OF THE ARTICLE'S OBJECTIVES

Thus, the article aims to investigate the current state of digital transformation in the accounting and auditing field. To achieve this goal the following research tasks were addressed:

1. Analysis of methodological approaches to the implementation of digital technologies;
2. Identification of an approach to evaluating the effectiveness and functional capabilities of modern software that ensures automation, transparency, and the improvement of the quality of accounting and auditing processes.

THE PAPER MAIN BODY

The methodology of digitizing accounting and auditing is a comprehensive process that includes several stages and involves the use of various tools and approaches. In general, it can be presented as a sequence of steps aimed at integrating digital technologies into a set of

Table 1. Systemic characterization of the features of analyzing the current state of accounting and auditing and outlining the goals of digitization

Step components	Features of step implementation
Audit of existing processes	In-depth analysis of current accounting and auditing processes, including examination of existing procedures (document flow, asset accounting, payroll, internal control, etc.), identification of strengths and weaknesses, bottlenecks, and inefficient operations (e.g., manual tasks, duplication of functions, errors, delays in execution).
Identification of needs and requirements	Identification of the enterprise's needs in the field of accounting and auditing, as well as the requirements of stakeholders (management, owners, regulatory bodies, etc.).
Formulation of digitization goals	Definition of specific, measurable, achievable, and relevant goals for the implementation of digital technologies (e.g., reducing the time required to process primary documents by 30%, increasing the accuracy of accounting data to 99%, etc.).

Source: compiled based on [1—2; 6].

interconnected actions, procedures, and methods used for both accounting and auditing the financial and economic activities of business entities. This refers to the integration of specialized software into:

1. A systematized process related to the collection, registration, processing, summarization, and storage of information about business transactions and enterprise assets. In other words, the outlined software is integrated into the primary accounting, current accounting, and the summarization of accounting data. An example of a digitized accounting system is "BAS Accounting," which ensures full automation of the enterprise's accounting and tax records by national standards.

2. The systematic activity related to obtaining and evaluating objective evidence regarding the reliability of financial statements and their compliance with established criteria (typically International Financial Reporting Standards or national regulations (standards) of accounting). In other words, the outlined software is integrated into audit planning, the collection of audit evidence, the evaluation of the collected evidence, and the formation of the audit opinion. An example of a digitized audit system is CaseWare IDEA, which is used by auditors for data analytics, automated account verification, and detecting anomalies in accounting systems.

Thus, digitizing accounting and auditing covers the entire cycle, from the initial recording of business transactions to the independent assessment of financial statements. Based on the analysis of the existing literature [2; 5—6], we have identified the following components of this methodology:

Step 1. Analysis of the current state of accounting and auditing and outlining the goals of digitization.

Step 2. Selection of appropriate software and digitalization technologies for accounting and auditing.

Step 3. Development of an implementation plan and preparation of the infrastructure for digitizing accounting and auditing.

Step 4. Implementation and configuration of software for digitizing accounting and auditing.

Step 5. Training and preparation of personnel responsible for the digitalization of accounting and auditing.

Step 6. Testing and pilot operation of digitized accounting and auditing systems.

Table 2. Systemic characterization of the selection of software and technologies for the digitalization of accounting and auditing

Step components	Features of step implementation	General specification
Market analysis of software products	Research of existing market systems for accounting automation, audit automation software, and electronic document management systems.	The correct selection of software allows for choosing the solution that best takes into account the specific characteristics of the enterprise's activities (including its size, budget, functional needs, integration capabilities with other systems, ease of use, and availability of technical support).
Evaluation and comparison of software products	Comparison of functional capabilities, cost, user-friendliness, integration possibilities with other systems, security level, and support of various software products.	
Selection of the optimal solution	Decision-making regarding the selection of specific software and technologies that best align with the enterprise's goals and needs.	

Source: compiled based on [2; 3–4; 6].

Table 3. Systemic characterization of the development of the implementation plan and preparation of the infrastructure for the digitalization of accounting and auditing

Step components	Features of step implementation
Preparation of Technical Infrastructure	Definition of stages, deadlines, responsible persons, and necessary resources for the implementation of selected digital solutions.
Development of a Detailed Implementation Plan	Ensuring the availability and proper functioning of required equipment (computers, servers, network equipment), software (operating systems, database management systems), as well as setting up secure and stable access to the Internet.
Development of Policies and Procedures	Updating or developing new internal policies and procedures that regulate the use of digital technologies in accounting and auditing, including rules for security, data access, and backup procedures.

Source: compiled based on [1–2; 6].

Step 7. Full-scale implementation and monitoring of the operation of digitized accounting and auditing systems.

Table 4. Systemic characterization of the implementation and configuration of software for the digitalization of accounting and auditing

Step components	Features of step implementation	General specification
Installation and configuration of software	The installation of selected software products and their configuration according to the enterprise's operational specifics and accounting policy requirements.	Proper installation ensures that the software is correctly installed on the technical infrastructure and can function as intended. Proper configuration allows for adapting the system to the specific needs of the enterprise, its accounting policies, and business processes.*
Data migration	The transfer of accounting data to the new digital system. This requires special attention to ensure the accuracy and completeness of the digitized and migrated data.	Proper migration ensures that the new system operates with up-to-date and accurate data from the moment it is launched.
Integration with other systems	Configuring the interaction of the new accounting or auditing system with other information systems within the organization ensures effective collaboration between different functional blocks.	Setting up interactions helps avoid data duplication, automates information exchange between systems (e.g., transferring sales data from the PRM to the accounting system), and enhances data consistency and integrity across the entire organization.

Note

This includes defining accounting parameters, setting up user access rights, and creating necessary reference books and classifiers.

Source: compiled based on [2; 5–6].

So, the analysis of the current state of accounting and auditing and outlining the goals of digitization is a comprehensive assessment of the existing accounting and auditing system of an enterprise or organization, aimed at identifying its strengths and weaknesses, the level of process automation, technological capabilities, and compliance with modern standards [2]. This step encompasses key components such as auditing existing processes, identifying needs and requirements, as well as formulating the goals of digitization (see Table 1). It should be noted that as a result of the analysis, strategic and operational goals of digitization are formulated, aimed at enhancing the efficiency, transparency, accuracy, and timeliness of accounting and auditing information through the implementation of digital technologies.

The selection of appropriate software and digitalization technologies for accounting and auditing involves the evaluation, comparison, and selection of modern software solutions and technological tools that best meet the enterprise's needs in the field of accounting and auditing.

Considering that the goal of this step is to ensure an effective transition to a digital environment that enhances the accuracy, speed, and transparency of accounting and auditing processes, it includes components such as the analysis of available software products, evaluation and comparison of these products, and the selection of the optimal solution (see Table 2).

This step allows for selecting the software that best takes into account the specific characteristics of the enterprise's activities. Currently, the choice of software solutions is limited to a set of accounting automation systems (ERP systems and accounting programs such as SAP Business One, Microsoft Dynamics 365, Oracle NetSuite, Odoo, M.E.Doc, Dilovod, iFin, Debit Plus, SMARTFIN.UA, BookKeeper, Liga: REPORT, MASTER: Accounting, Parus), cloud accounting services (QuickBooks Online, Zoho Books, FreshBooks), audit automation software (CaseWare Audit, CCH Audit Automation, Team-Mate Analytics, Ivakhnenkov & Katienov Audit), electronic document management systems (Vchasno, M.E.Doc.Document Management, FossDoc, e-Docs, Megapolis.DocNet, Scriptum, Deals, UnityBase, LoGo), and tools for data analysis and business analytics.

The development of an implementation plan and preparation of the infrastructure for the digitalization of accounting and auditing is strategic and operational planning, which involves determining the

sequence of actions, resources, timelines, and responsible parties for the implementation of digital solutions, as well as the creation or modernization of the technical and organizational infrastructure.

Considering that the goal of this step is to ensure continuous, coordinated, and efficient implementation of digital tools into the accounting and auditing system with minimal risks to the operational activities of the enterprise, it includes key components such as developing a detailed implementation plan, preparing the technical infrastructure, and creating policies and procedures (see Table 3). All of the outlined components are interconnected and equally important for creating a strong foundation for the further digitalization of accounting and auditing processes. Their thorough consideration at this stage significantly increases the likelihood of successful implementation of digital solutions.

The implementation and configuration of software for the digitalization of accounting and auditing is the realization of digital transformation, which includes the installation of the selected software, its technical setup, integration with other information systems of the enterprise, and the adaptation of functionality to the specific needs of the company's accounting and auditing activities. Thus, this step includes key components such as the installation and configuration of software, data migration, and integration with other networks (see Table 4).

This step is essential for creating a fully functional and integrated digital system that can efficiently perform accounting and auditing tasks while interacting with other key business processes within the organization.

Training and preparing the staff responsible for implementing the digitalization of accounting and auditing tasks includes key components such as conducting training courses, developing training materials and instructions, and providing ongoing support (see Table 5).

Successful training and preparation of staff are critical factors for the effective implementation and subsequent use of digital technologies in accounting and auditing. Well-trained and confident employees will be able to maximize the capabilities of new systems, leading to increased productivity, reduced risk of errors, and improved quality of accounting and auditing information.

Testing and pilot operation of digitalized accounting and auditing systems involve the implementation of digital technologies, during which the functionality, stability, accuracy, and compliance of the new system with the practical needs of the enterprise are checked. Therefore, this step includes key components such as conducting testing of the defined systems and making adjustments to the system's format (see Table 6).

The goal of the testing and pilot operation stage is to minimize risks during the full-scale implementation of the

Table 5. Systematic characteristics of training and preparing personnel responsible for implementing digitalization of accounting and auditing tasks

Step components	Features of step implementation
Conducting training courses	Organization of both theoretical* and practical** sessions for employees who will be using the new software and digital tools.
Developing training materials and instructions	Preparing detailed instructions (including step-by-step descriptions of how to perform key operations in the new system, accompanied by screenshots and examples) and instructional materials for users (which include a glossary of terms, answers to frequently asked questions (FAQ), short video tutorials, and reminders).
Providing ongoing support	Providing users with technical support (which can be provided by the company's internal IT specialists or external software vendors) and consultations during the use of new systems (including answering questions regarding system functionality, accounting features under the new conditions, and best practices for using the software).

Note:

*Theoretical classes may include familiarization with the basic functionalities of the system, its architecture, data handling principles, and security and information protection requirements.

**Practical sessions are equally important as they allow employees to directly practice working in the new system under the guidance of an instructor.

Source: compiled based on [3; 6].

Table 6. System characteristics of testing and pilot operation of digitalized accounting and auditing systems

Step components	Features of step implementation	General specification
Conducting testing	Thorough testing of all functional capabilities of the implemented software to identify potential errors and shortcomings (including functional testing, performance testing, security testing, integration testing, user testing, etc.).	This step is iterative. After making adjustments, retesting may be necessary to verify the effectiveness of the changes and eliminate any new potential errors.
Pilot operation	Launching the system in a limited mode* or in a specific department** of the enterprise to assess its effectiveness in real-world conditions.	
Making adjustments	Based on the results of testing and pilot operation, necessary changes and adjustments are made to the system (specifically, within this component, defects and inconsistencies identified in the software's operation are addressed, and modifications are made to the system configuration considering the real needs of users and the specifics of business processes identified during the pilot operation).***	

Note:

* The system may be launched in parallel with the old system, allowing for comparison of their performance and ensuring the accuracy of the new system's results before fully transitioning to it.

** The system may initially be implemented in one department or branch of the enterprise, providing real-world experience in its use, identifying potential issues not detected during testing, and collecting feedback from users in the actual working environment.

*** If necessary, minor adjustments to the system's functionality may be made based on user feedback and identified needs.

Source: compiled based on [2; 3—4; 6].

digital accounting and audit system, ensure its stable and effective operation, and prepare users to work in the new environment. Thorough execution of these steps is the key to the successful digitalization of accounting and auditing.

Full-scale implementation and monitoring of the operation of digitalized accounting and audit systems is the process of launching new digital systems into full-scale operation, with the complete transition of all accounting and auditing processes to an automated platform. This stage includes key components such as the full launch of the system, monitoring of its effectiveness, and evaluating the results.

In fact, this step is essential for the final transition to digital solutions in the field of accounting and auditing, ensuring their stable operation and further development.

It is important to note that the digitalization methodology may vary depending on the size of the enterprise, industry specifics, the complexity of accounting processes, and available resources. However, the stages outlined above provide a general framework for the successful implementation of digital technologies in the field of accounting and auditing.

CONCLUSIONS

Thus, the process of digitalizing accounting and auditing encompasses the entire cycle — from the initial recording of business transactions to the independent evaluation of financial reporting — guided by the key steps that make up the comprehensive methodology of this process.

In particular, important steps include: the first step — analyzing the current state of accounting and auditing, which allows for clearly identifying the strengths and weaknesses of existing processes and formulating the goals of digitalization; the second — selecting the appropriate software and technologies that provide optimal solutions for automation and improving the accuracy of accounting processes; the third — developing a detailed implementation plan and preparing the necessary infrastructure to support digital technologies.

In addition, significant roles in the digitalization process are played by the stages of software implementation and configuration, staff training, as well as thorough testing and pilot operation of the systems, which ensure their effectiveness and stability in real-world conditions. The final stage is full-scale implementation and continuous monitoring of the system's performance, ensuring an uninterrupted accounting and auditing process based on digital technologies.

Thus, the correct sequence of steps, clear planning, and effective implementation of the digitalization methodology form the foundation for enhancing the efficiency, transparency, and accuracy of accounting and auditing processes in the context of the modern digital economy.

Prospects for further research lie in an in-depth study of the effectiveness of implemented digital solutions, the assessment of their impact on the quality of accounting and auditing information, as well as the development of innovative models for integrating accounting systems with artificial intelligence and data analytics technologies.

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Table 7. System characteristics of full-scale implementation and monitoring of digitalized accounting and audit systems

Step components	Features of step implementation	General specification
Full-scale system launch	Transition to the use of the new digital system for accounting and/or auditing.	Processing data on its performance and achievement of set goals.
Efficiency monitoring	Continuous monitoring of the system's performance, collecting data on its productivity, and assessing the achievement of set goals.	Using analytics, real-time reporting, and automated KPI indicators.
Results evaluation	Analysis of the digitalization results, identification of achieved benefits, and identification of potential areas for further improvement.	Comparative analysis «before-after», user surveys, preparation of ROI reports.

Source: compiled based on [1—2; 6].

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Стаття надійшла до редакції 07.05.2025 р.