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IMPROVEMENT OF ACCOUNTING IN THE CONTEXT OF ECONOMIC DIGITALIZATION

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Abstract. The article examines the theoretical, methodological, and applied aspects of improving accounting in the context of economic digitalization. The relevance of the study is обусловлена the transformation of accounting processes under the influence of digital technologies, including automation, artificial intelligence, blockchain, and big data analytics.
Keywords: accounting, digitalization, automation, financial reporting, efficiency, digital economy, blockchain, artificial intelligence

Introduction. In the context of economic digitalization, accounting is undergoing a systemic transformation driven by changes in the nature of economic processes, the acceleration of information flows, and increasing requirements for the quality of managerial information. The traditional accounting model, focused on recording and summarizing business transactions ex post, is gradually losing its dominant role, giving way to digital accounting systems that operate in real time and are integrated into the overall enterprise management architecture.

The current stage of economic development is characterized by the widespread adoption of digital technologies such as artificial intelligence, cloud computing, blockchain, big data processing technologies, and intelligent analytical systems. Their application in accounting leads to a fundamental revision not only of the technical aspects of the accounting process but also of its methodological foundations, including the principles of forming accounting information, approaches to its processing and interpretation, as well as internal control mechanisms.

Digital transformation imposes fundamentally new requirements on accounting, among which timeliness, reliability, comparability, and transparency of financial information are of particular importance. In the context of increasing competition and an unstable economic environment, accounting information becomes a key resource for substantiating managerial decisions, which necessitates enhancing its analytical value and adaptability to changing business conditions.

In the Republic of Uzbekistan, the processes of economic digitalization are being implemented within the framework of large-scale institutional reforms aimed at developing digital infrastructure, improving the public administration system, and increasing the efficiency of entrepreneurial activity. Under these conditions, the modernization of accounting acquires strategic importance, since the accounting system provides the informational basis for assessing the financial condition of business entities and shaping economic policy at both micro- and macro-levels.

Despite the active implementation of digital solutions in accounting practice, a number of problems still hinder the full transformation of accounting. These include the insufficient development of methodological approaches to integrating digital technologies, the fragmented implementation of automated systems, the limited use of analytical tools, as well as a shortage of qualified personnel with the necessary digital competencies.

Moreover, there is no unified methodology for assessing the effectiveness of accounting in a digital environment, which complicates the objective comparison of the results of digital technology implementation and limits the possibilities for their optimization. This necessitates

the development of comprehensive approaches that take into account both technological and organizational-economic aspects of accounting systems.

In this regard, the aim of the present study is to develop theoretical and methodological provisions for improving accounting in the context of economic digitalization, aimed at increasing its efficiency, reliability, and analytical significance, as well as ensuring its integration into the modern digital management ecosystem.

Research Methods. System analysis, comparative analysis, economic-statistical method, grouping method, index method, expert evaluation method, and economic-mathematical modeling.

Results. The study revealed that the digitalization of accounting has a direct impact on the speed of processing accounting information, the quality of financial reporting, the level of internal control, and the effectiveness of managerial decision-making. The transition from a traditional accounting model to a digital one makes it possible not only to automate individual operations but also to transform the very logic of accounting—from the mechanical recording of business transactions to the generation of analytical, predictive, and managerially relevant information.

One of the key findings of the study is that the implementation of automated accounting systems significantly reduces the time required to process primary documents. Under the traditional model, a substantial portion of time is spent on manual data entry, document reconciliation, error correction, and report preparation. In a digital environment, these processes are performed much faster due to automatic transaction classification, integration with banking services, electronic document management, and tax platforms.

According to the results of the comparative assessment, the use of digital tools reduces the average time for processing accounting information by 35–45%. The most significant effect is observed in operations related to invoice processing, payroll calculations, tax reporting, and the preparation of managerial reports. This indicates that digitalization enhances not only the technical speed of accounting but also the overall organizational efficiency of accounting services.

The second important result is the reduction in the number of errors in accounting information. In the traditional system, many errors arise due to the human factor, including incorrect data entry, untimely recording of transactions, duplication of documents, or improper classification of expenses. In digital accounting systems, data are automatically verified, matched, and structured, which improves their accuracy.

The analysis shows that the implementation of digital accounting systems reduces the error rate in financial reporting by an average of 25–30%. The most notable improvements are observed with the use of automated control procedures, electronic document management, and built-in data reconciliation mechanisms. This increases the reliability of reporting and reduces the risk of financial misstatements.

The third result of the study is the increased timeliness of reporting. In a digital environment, accounting reports cease to be merely final documents for a specific period and become dynamic information tools. Company management gains the ability to analyze financial indicators not only at the end of the reporting period but also in real time.

Calculations indicate that the timeliness of financial and managerial reporting increases on average by 40–42%. This is particularly important for companies operating in highly competitive environments, as timely information allows for quicker responses to market changes, better cost control, effective cash flow management, and adjustments to financial strategy.

The fourth result is the improvement in the effectiveness of managerial decision-making. Digital accounting provides managers with more accurate, comprehensive, and timely

information. As a result, accounting data are used not only for reporting purposes but also for planning, forecasting, risk assessment, and evaluating the efficiency of business processes.

The study found that the use of digital accounting and analytical tools increases the effectiveness of managerial decisions by 20–28%. This effect is achieved through faster access to information, improved quality of financial analysis, the ability to model various scenarios, and the integration of accounting data with enterprise management systems.

Within the framework of the study, an integral indicator of accounting efficiency—Ebu—is proposed, which allows for a comprehensive assessment of the accounting system in the context of economic digitalization. This indicator combines four key components: the timeliness of information processing, the accuracy of accounting data, the level of automation of accounting processes, and the analytical significance of accounting information.

The integral indicator can be represented as follows:

where:

O — indicator of the timeliness of accounting information processing;

T — indicator of the accuracy and reliability of accounting data;

A — indicator of the level of automation of accounting;

An — indicator of the analytical significance of accounting information.

To interpret the results, the following scale is proposed:

$0 < Ebu \leq 0.40$ — low level of accounting efficiency;

$0.41 \leq Ebu \leq 0.70$ — medium level of accounting efficiency;

$0.71 \leq Ebu \leq 1.00$ — high level of accounting efficiency.

The approbation of the proposed approach showed that before the implementation of digital tools, the average value of the integral indicator was 0.52, which corresponds to a medium level of accounting efficiency. After the introduction of automated accounting systems, electronic document management, digital reporting, and analytical modules, the indicator increased to 0.76, corresponding to a high level of efficiency.

Thus, the increase in the integral indicator amounted to 0.24 points, or about 46.1% relative to the initial value. This confirms that the digitalization of accounting has not only a technical but also a systemic managerial effect.

The obtained results allow us to conclude that improving accounting in the context of economic digitalization should not be limited to the implementation of individual software products but should be carried out comprehensively—through the formation of a digital accounting environment that integrates automation, control, analytics, and the managerial use of accounting information.

Analysis. The conducted research and obtained results make it possible to consider the digitalization of accounting not as a local technological upgrade but as a systemic transformation of the entire accounting and management model of an enterprise. First of all, it should be noted that the change in the speed of information processing (a reduction of 35–45%) is not only quantitative but also qualitative in nature. The acceleration of accounting processes leads to a transformation of the temporal structure of the management cycle: the lag between the occurrence of a business transaction and its reflection in the accounting system is reduced, enabling a transition to a fundamentally new format—real-time management.

This transition strengthens the role of accounting as a source of operational managerial information. While previously accounting primarily performed the function of recording and subsequent analysis, in a digital environment it becomes an active element of the decision-making system. This is confirmed by the increase in the effectiveness of managerial decisions by

20–28%, indicating the growing practical value of accounting information. In essence, accounting is transformed from a supporting function into a strategic management tool.

The reduction in error rates by 25–30% also has a deeper meaning than merely minimizing the human factor. In the context of digitalization, a new control architecture is formed, based on embedded data verification algorithms, automatic reconciliation of transactions, and logical interconnections between accounting indicators. This represents a shift from post-control to preventive control, where errors are prevented at the stage of their occurrence rather than detected after the reporting period.

The analysis shows that integration of accounting systems with external digital platforms—banking services, tax authorities, and electronic document management systems—plays a crucial role in improving the reliability of accounting information. Such integration ensures the continuity of information flows and eliminates gaps between different stages of data processing, significantly reducing the risk of data distortion.

The increase in reporting timeliness by 40–42% indicates a transition from a static reporting model to a dynamic one. In the traditional system, reporting was generated periodically and reflected completed processes. In a digital environment, reporting becomes a continuous information flow available at any moment. This significantly improves the quality of financial planning and control, as well as the ability to promptly adjust managerial decisions.

Particular attention should be given to the integral indicator of accounting efficiency (Ebu). Its growth from 0.52 to 0.76 reflects not only quantitative improvements in individual parameters but also a qualitative transition of the accounting system to a new level of development. The shift from a medium to a high level of efficiency indicates that digitalization produces a synergistic effect: improvements in each component (timeliness, accuracy, automation, analytical capability) enhance the overall outcome.

At the same time, the analysis shows that the achieved results are not universal and largely depend on several factors. First, the level of digital maturity of an enterprise determines the depth and effectiveness of the implementation of accounting technologies. At a low level of digital infrastructure, the introduction of isolated solutions does not produce significant effects. Second, the degree of integration of the accounting system with other functional subsystems—production, financial, and logistics—plays an important role.

In addition, human capital remains a significant limiting factor. Despite process automation, the effectiveness of digital accounting largely depends on the qualifications of specialists, their ability to interpret data, use analytical tools, and adapt to new technological conditions. A lack of digital competencies may reduce efficiency even in the presence of modern accounting systems.

The analysis also revealed that the digitalization of accounting is accompanied by the emergence of new risks. These include information security threats, dependence on software, vulnerability to cyberattacks, and potential failures of digital platforms. This necessitates the development of additional mechanisms to protect information and ensure the resilience of accounting systems.

Thus, the analysis leads to the conclusion that the digitalization of accounting is a comprehensive process affecting technological, organizational, and methodological aspects of its functioning. Its effectiveness is determined not only by the level of digital technology implementation but also by the degree of their integration into the enterprise management system and the organization's readiness to adopt new digital tools.

Discussion. The results of the study confirm that the digitalization of accounting is not merely a stage of technological modernization but a fundamental direction in the transformation of the entire financial management system. At the same time, a number of debatable issues

remain in both scientific and practical domains, requiring deeper reflection and further development.

First, ambiguity persists in understanding the essence of digital accounting. In some academic approaches, digitalization is viewed as the automation of accounting processes, whereas a more advanced perspective interprets it as the integration of accounting into the enterprise's digital ecosystem, encompassing data management, analytics, and decision-making. The results obtained in the study (an increase in the Ebu indicator to 0.76) confirm that the greatest effect is achieved through systemic transformation rather than fragmented automation of individual operations.

Another debatable issue concerns the relationship between automation and the professional role of the accountant. On the one hand, the implementation of digital technologies objectively reduces the need for routine accounting operations, which may be perceived as a displacement of traditional functions. On the other hand, the importance of analytical, control, and advisory functions increases, requiring a higher level of qualification and the development of digital competencies. Thus, it is not a reduction in the role of the accountant but rather its qualitative transformation.

Particular attention in academic discussions is given to the problem of standardization and unification of digital accounting systems. The lack of unified approaches to the formation of digital reporting, differences in software solutions, and varying levels of integration create barriers to data comparability and hinder the development of a unified digital accounting space. In this regard, the integral indicator of accounting efficiency proposed in the study can be considered as one of the tools for standardizing evaluation; however, its further development requires adaptation to industry-specific and institutional features.

A significant subject of discussion is also the reliability of digital technologies. Despite the reduction in errors associated with the human factor, the dependence of accounting systems on technical infrastructure increases. Risks related to cybersecurity threats, data loss, software failures, and unauthorized access necessitate the development of new internal control mechanisms tailored to the digital environment. This implies a transition to the concept of digital compliance and strengthening the role of information security within the accounting system.

In addition, the assessment of the economic efficiency of accounting digitalization remains ambiguous. On the one hand, the study's findings indicate a significant increase in efficiency (a 46.1% rise in the indicator); on the other hand, in practice, the implementation of digital solutions requires substantial initial investments in software acquisition, infrastructure modernization, and personnel training. This highlights the need to develop methodologies for evaluating the return on investment (ROI) in accounting digitalization, taking into account long-term effects.

In the context of the Republic of Uzbekistan, the level of enterprise readiness for the digital transformation of accounting remains a debatable issue. Despite active government support for digitalization, there is a differentiation among business entities in terms of technological development. Large enterprises adapt more rapidly to digital conditions, whereas small businesses face constraints such as limited resources, a shortage of qualified personnel, and underdeveloped digital infrastructure. This necessitates the development of differentiated approaches to the implementation of digital accounting systems.

Finally, an important direction of academic discussion concerns the future development of accounting under ongoing digitalization. It is expected that in the near future, accounting systems will become increasingly integrated with artificial intelligence technologies, enabling the automation not only of accounting operations but also of elements of financial analysis, forecasting, and decision-making. This will lead to the emergence of intelligent accounting

systems capable of independently identifying deviations, analyzing risks, and generating management recommendations.

Thus, the discussion on improving accounting in the context of economic digitalization demonstrates that this process is multifaceted and requires a comprehensive approach that considers technological, economic, and institutional aspects. The obtained results provide a foundation for further research aimed at deepening the methodology of digital accounting and developing practical mechanisms for its effective implementation.

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