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# DIGITALIZATION OF ACCOUNTING AND AUDITING AS A FACTOR IN INCREASING THE EFFICIENCY OF NATIONAL RESOURCE MANAGEMENT

National resources are an important element of economic development, determining the possibilities and prospects of the country, and their effective management contributes to the achievement of economic growth and prosperity of any country. Improving the quality of national resource management will significantly increase the output of the gross product. The accounting and auditing industry is critical in organizing management and making informed decisions in ensuring compliance with regulatory requirements for the efficient use of national resources. Recently, these industries have seen a shift towards digital transformation. Recently, these industries have seen a shift towards digital transformation, which in the modern world affects many aspects from business processes and technologies to employee competency assessment. And as a result, digital innovations have affected the accounting and auditing system. New accounting and auditing tools have emerged, making the system even more efficient and informative, which in turn contributes to the growth of prosperity in any country. At the same time, there is currently no model for the development of accounting and auditing that is being transformed in the direction of digitalization of the management of the country's national resources. The article reveals the features of the transformation of accounting and auditing associated with digitalization, and how this process contributes to the efficiency of national resource management. The object of the study was digital accounting and auditing technologies and their application in the management of national resources. The directions of modernization of accounting and auditing processes related to the use of digital data in the processing of reporting information, how to obtain financial information for its users today, using advanced digital technologies, and what impact technological innovations have on accounting and auditing of national resources are studied. The dialectical and empirical methods are used as the main methodological principles of the study. The main result of the study is a generalization of the stages of transformation of accounting and auditing processes in modern conditions of digitalization, aimed at improving the efficiency of managing the country's national resources. The results obtained can be used by economic entities to strengthen their competitive advantages in the context of global digital transformation.

**Key words**: accounting, audit, digitalization, electronic reporting, national resources, blockchain technology, robotization.

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## Бухгалтерлік есеп пен аудитті цифрландыру ұлттық ресурстарды басқару тиімділігін арттыру факторы ретінде

Ұлттық ресурстар елдің мүмкіндіктері мен болашағын айқындайтын экономикалық дамудың маңызды элементі болып табылады және оларды тиімді басқару кез келген елдің экономикалық өсуі мен өркендеуіне ықпал етеді. Ұлттық ресурстарды басқару сапасын жақсарту жалпы өнім шығаруды айтарлықтай арттырады. Бухгалтерлік есеп және аудит саласы ұлттық ресурстарды тиімді пайдалану бойынша нормативтік талаптардың сақталуын қамтамасыз етіп, шешімдерді қабылдауға және басқаруды ұйымдастырудың негізі. Заманауи әлемде соңғы жылдары аталған салаларда бизнес үрдістер мен технологиялардан бастап қызметкерлердің кәсібилігін бағалау сияқты аспектілерді қоса алғанда, сандық трансформацияға қарай өзгеріс байқалады. Бухгалтерлік есеп пен аудиттің жаңаланған құралдары пайда болуда. Нәтижесінде жүйе бұрынғыдан тез және ақпаратты болған. Бұл өз кезегінде елдің әл-ауқатының өсуіне әсер етеді. Сонымен қатар, қазіргі

 

қатар, қазіргі уақытта елдің ұлттық ресурстарын басқаруды цифрландыру бағытында түрлендіруге болатын есеп пен аудитті дамытудың бірде-бір моделі жоқ. Мақала бухгалтердік есеп пен аудиттің цифраландырылуымен байланысты трансформациялау өзгешеліктерін және бұл үрдістің ұлттық ресурстарды басқару тиімділігіне ықпалын сипаттауға арналған. Зерттеу объектісі цифрлық есеп пен аудит технологиялары және оларды ұлттық ресурстарды басқаруда қолдану болды. Сонымен қатар, шаруашылық қызметтің ақпаратын өңдеуде сандық деректерді қолдануға байланысты бухгалтерлік есеп пен аудитті жүргізуде заманауи технологияларды және инновацияларды пайдалану ұлттық ресуртардың есебі мен аудитін ұйымдастыруға әсері зерттеледі. Зерттеу жұмысының негізгі әдіснамалық қағидалары болып диалектикалық және эмпирикалық әдістері алынған. Зерттеудің басты нәтижесі елдің ұлттың ресурстарын басқарудың тиімділігін арттыру мақсатындағы, қазіргі замандағы цифраландыру жағдайында, бухгалтерлік есеп пен аудит үрдістерінің трансформация кезеңдерін жалпылау болып табылады. Экономикалық субъектілер алынған нәтижелерді, жаһандық сандық трансформация жағдайында, өздерінің бәсекелестік артықшылықтарын арттыруда қолдана алады.

**Түйін сөздер:** бухгалтерлік есеп, аудит, цифрландыру, электронды есептілік, ұлттық ресурстар, блокчейн технологиясы, роботизациялару.

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## Цифровизация учета и аудита как фактор повышения эффективности управления национальными ресурсами

Национальные ресурсы являются важным элементом развития экономики, определяющим возможности и перспективы страны, и их эффективное управление способствует достижению экономического роста и процветания любой страны. Повышение качества управления национальными ресурсами позволит существенно увеличить выпуск валового продукта. Сфера бухгалтерского учета и аудита имеет решающее значение в организации управления и принятии обоснованных решений в обеспечении соблюдения нормативных требований по эффективному использованию национальных ресурсов. В последнее время в этих отраслях наблюдается сдвиг в сторону цифровой трансформации, которая в современном мире, затрагивает множество аспектов от бизнес-процессов и технологий до оценки компетенций сотрудников. И как следствие цифровые инновации затронули систему учета и аудита. Возникли новые инструменты ведения бухгалтерского учета и осуществления аудиторской деятельности, благодаря которым система становится еще более оперативной и информативной, что в свою очередь способствует росту благосостояния любой страны. В то же время в настоящее время не существует какой-либо модели развития учета и аудита, трансформируемой в направлении цифровизации управления национальными ресурсами страны. Статья раскрывает особенности трансформации бухгалтерского учета и аудита, связанные с цифровизацией, и как данный процесс способствует эффективности управления национальными ресурсами. Объектом исследования выступили цифровые технологии бухгалтерского учета и аудита и их применение в управлении национальными ресурсами. Изучаются направления модернизации процессов учета и аудита, связанных с использованием цифровых данных при обработке отчетной информации, как получать сегодня финансовую информацию ее пользователям, применяя передовые цифровые технологии, и какое влияние оказывают технологические инновации на бухгалтерский учет и аудит национальных ресурсов. В качестве основных методологических принципов исследования применены диалектический и эмпирический методы. Основным результатом исследования является обобщение этапов трансформации процессов учета и аудита в современных условиях цифровизации, направленных на повышение эффективности управления национальными ресурсами страны. Полученные результаты могут быть использованы экономическими субъектами для усиления конкурентных преимуществ в условиях глобальной цифровой трансформации.

**Ключевые слова:** бухгалтерский учет, аудит, цифровизация, электронная отчетность, национальные ресурсы, технология блокчейн, роботизция.

## Introduction

The digital economy, as we have already seen, is a modern reality. Digital technologies have become an integral part of social life and production processes. The most significant achievements of the digital economy today are – Robotics, Artificial Intelligence, Cryptocurrency, Blockchain technology, etc.

Digital technologies are capable of influencing the strategies and competitiveness of companies in the market, are constantly evolving and serve as prerequisites for the modernization of many economic processes.

According to research, accounting is one of the most ancient and traditional tools of the economy. Throughout this time, the rules and methodology of this mechanism have remained unchanged. But with the advent of digital innovations, accounting and, as a result, auditing are undergoing major changes.

In the accounting area, where digital technologies are already used, the following positive aspects can be noted: increased transparency of information; the ability to continuously monitor information; increased consumer confidence in the results of the audit; reduced processing time for mega data and efficiency in preparing final reports.

*This is the primary reason the IFRS Foundation has led the way in embracing and implementing digital technologies for many years, focusing on enhancing the IFRS taxonomy for electronic reporting. To achieve this, a dedicated electronic language for IFRS reporting was created, utilizing a specific licensed standard known as Extensible Business Reporting Language (XBRL), which essentially translates to «extensible business reporting language».*

*The primary goal of XBRL is to display financial statements in compliance with IFRS (Juhandi et al., 2022) and US GAAP in electronic form (Hoitash, R., Hoitash, U., Morris, 2020).*

Electronic reporting has already become a pan-European law. The European Commission has done a lot of work to formulate requirements for listed companies preparing consolidated IFRS financial statements in electronic format. These requirements are part of a broader initiative to move the EU towards a single electronic reporting format (European Single Electronic Format), which should facilitate access and improve the transparency of financial information (Cati-Loredana, 2022).

Recognizing the importance and role of the IASB in developing a high-quality IFRS Taxonomy system, the IASB is simultaneously developing standards on information technology-related topics.

The digital transformation of accounting processes, in turn, entails changes in the tasks facing the audit. The use of automated data processing contributes to high-quality audits and allows for a more thorough identification of possible risks, as well as the prompt analysis of the resources used by companies. Such modernization of audit increases transparency, resulting in a high degree of confidence in the reliability of audit results.

As part of this work, the directions for modernization of accounting and audit processes related to the use of digital data in the processing of reporting information are studied, how to obtain financial information for its users today, using advanced digital technologies, and what impact technological innovations have on accounting and audit tools in general.

## Literature review

The development of accounting as an economic science is historically closely linked to the processes taking place in the economy. In mid-2000, the leaders of the G8 countries signed the Okinawa Charter for a Global Information Society, marking the entry of developed countries into a new era of digital development in the 21st century. (Okinawa Charter, 2000) The document noted that information and communication technologies were becoming a key factor in the global economy and were intended to contribute to the mutually reinforcing goal of sustainable economic growth. At the same time, one of the main tasks is the need to reduce the gap in digital technologies.

In the Address of the President of the Republic of Kazakhstan K-Zh.K.Tokayev dated 10, 2018 the first steps towards a new Kazakhstan and a new world of the fourth industrial revolution were outlined, for this purpose, it was proposed to begin developing a third five-year industrialization program dedicated to the formation of industries adapted to the «digital era». The speech also proposed initiating a large-scale systemic program for the development of a new digital economy (Tokayev, 2018). Earlier, in order to accelerate the pace of development of the Kazakh economy and improve the quality of life of citizens, a comprehensive program «Digital Kazakhstan» was adopted, in which the formation of a national digital economy in Kazakhstan was designated as one of the directions of such development. At the same time, three main principles were defined for the Digital Kazakhstan program: digitalization of key industries, introduction of the latest technologies and use of digital approaches.

The situation with the coronavirus pandemic has accelerated the pace of digitalization of all economic processes several times over.

The IFRS Foundation has undertaken a number of activities to share the global concern about the impact of the coronavirus pandemic and to support stakeholders. In December 2019, the IASB published guidance on how to prepare financial statements in the context of the pandemic. Then, it published an updated version of the Taxonomy of International Accounting Standards based on IFRS standards as of 1 January 2020 (including those issued but not yet effective). Then, in August 2020, the IFRS Foundation approved amendments to IFRS 16 to reflect new accounting rules for rent concessions arising from covid-19. Finally, on 8 October 2020, the Financial Reporting Council (FRC) proposed that all business reporting, including financial statements, be published digitally (FASB Staff, 2020).

The main argument of the Council was that companies' annual reports are too long and the information is difficult to access. Many companies and users face significant challenges in preparing and analyzing the information contained in their reports, and the Covid-19 pandemic has made this situation even more difficult (FRC, 2020).

In domestic economic science, there is an insufficient number of studies devoted to the analysis of the transformation of accounting and audit processes of national resources. Among the available scientific works, it would be worth highlighting the work on the development of digital audit in the Republic of Kazakhstan (Berezuk, 2024). According to the author, the rapid development of digitalization of audit will strengthen the country's economic security and its further development. In addition, it was concluded that there are problems in the Republic of Kazakhstan that negatively affect the process of digitalization of the economy of Kazakhstan. Consequently, it becomes relevant to conduct research aimed at both developing theoretical foundations for this problem and studying best practices in the digitalization of accounting and audit processes. Most of the studies on this topic are carried out by foreign authors. Let us consider the most famous of them.

As already noted, developing digitalization affects all stages of the accounting process – from the formation of reports to the processing of their indicators. The use of current computer technologies and communication tools has significantly increased the number of possibilities for presenting the results of the accounting process, and the use of blockchain technology in the banking and financial sector has entailed fundamental changes in the accounting system (Khurana et al., 2024; Bagrii, et al., 2024). Blockchain technology can be widely used in the preparation of reports, their coordination and approval, as well as at different stages of their audit (Hongdan Han et al., 2023).

There are different points of view on the benefits of using the blockchain idea for the accounting and auditing system. Firstly, the blockchain idea is considered as a mechanism that prevents fraudulent activities (Pineda, et al., 2024). Secondly, blockchain technology is capable of forming a realistic, verified and transparent accounting ecosystem (Kupenova, et al., 2022). At the same time, in the current conditions, the implementation of accounting on the blockchain is technically impractical due to its low speed and high energy consumption (Mohsina, et al., 2024). Other experts believe that blockchain is capable of changing the current accounting and auditing practices, as it provides an accurate, timely and automated data confirmation system. (Danach, et al., 2024).

Well-known international accounting organizations such as ICAEW, the Association of Chartered Certified Accountants (ACCA), the Chartered Institute of Management Accountants (CIMA), the Chartered Institute of Fiscal Accountants (CIPFA) and the International Federation of Accountants (IFAC) have published a lot of information on their websites about blockchain technology. Deloitte, EY, KPMG and PwC, the world's largest network of audit and consulting firms, are actively implementing blockchain in their businesses to fully meet the rapidly changing needs of their clients (O'Neal, 2019). For example, Deloitte created its Rubix division and launched a plug-and-play blockchain product (Leung, 2016; Palmer, 2019). EY introduced a blockchain analyzer platform to support auditors' reconciliations, PwC released cryptocurrency audit software and updated its Halo tool for this purpose, KPMG is collaborating with Microsoft to create blockchain-based services (O'Neal, 2019).

In addition, there is a study that proves that blockchain technology will affect the database mechanism of accounting information systems (AIS) simply because all the existing paper checks will be digitized (Tan and Low, 2019). It is also believed that the technology can provide secure storage of accounting data such as accounts payable and receivable (Dai and Vasarhelyi, 2017) and improve the efficiency of transaction recording (ICAEW, 2018). Deloitte (2017), McWaters (2016) and other researchers (Jayalakshmi, 2024) have identified ways in which blockchain technology can address current accounting and auditing system challenges,

including simplifying the transaction recording process, reducing settlement times and counterparty risk, and minimizing fraudulent transactions.

All of the above suggest that there is a need to consolidate the advanced modern digital technologies used in the accounting and audit process.

## Methodology

To investigate the issues discussed in this work, various general scientific methods were employed, including theoretical generalizations, empirical comparisons, scientific abstraction, expert-analytical evaluation, and cause-and-effect analysis.

To begin with, the study's theoretical and methodological framework was established using scholarly articles from respected researchers in the digital transformation field, which were published in prestigious journals. Following that, a thorough literature search was performed using keywords pertinent to the research topic. Additionally, recognizing the ongoing evolution of digital technologies, the study also explored relevant industry literature, such as reports, blogs, and news articles about cutting-edge digital advancements. This strategy enabled us to encompass a broad spectrum of literature on the latest technologies associated with the digitalization of economic processes, particularly focusing on innovative approaches to accounting and auditing.

We examined pertinent sources from Scopus, the largest database of abstracts and citations for peer-reviewed literature, utilizing search terms such as «digitalization», «accounting», «electronic reporting», «blockchain», «robotics», «accounting process», and «audit». Since our research intended to pinpoint trends in the development of accounting and auditing amidst digitalization, we refined our search results to concentrate on journal articles and particular subject areas such as Business, Management, Accounting, Economics, and Reporting. As a result, the study's theoretical framework was based on the contributions of notable modern scholars and practitioners dedicated to improving accounting and auditing processes associated with the collection, consolidation, and analysis of data regarding the use of national resources during the transition to digital technologies. The challenges surrounding the global transformation of accounting and auditing systems, influenced by the information potential of the current economic landscape, are particularly pressing at this time.

The research employs a systems approach to examine how innovative digital technologies are reshaping accounting methods within the accounting process.

The study primarily utilizes empirical methods as its foundational methodological principles.

In the context of the methodological aspect of our study, we drew attention to the works of many leading scholars, including those by Dai and Vasarhelyi (2017), as well as Jayalakshmi (2024), who proposed the use of blockchain for reporting and auditing processes. Our study also considered the potential of the new electronic reporting language, XBRL International, which is recommended by the IFRS Foundation. This method is important, as electronic reporting is gaining increasing popularity worldwide, especially in the accounting of public funds. The study primarily utilizes empirical methods as its foundational methodological principles. We have examined various sources of information. In the methodological context of our study, we have highlighted the works of leading scholars, such as Dai and Vasarhelyi (2017) and Jayalakshmi (2024), who proposed the use of blockchain for reporting and auditing processes. Our study also explores the potential of the new electronic reporting language, XBRL International, recommended by the IFRS Foundation. This method is significant, as electronic reporting is becoming increasingly popular worldwide, especially in the accounting of public funds.

A key hypothesis of the research focuses on identifying which accounting and auditing methods are currently effective in global practice and determining their applicability in the context of global digital transformation. The principal outcome of this study is the synthesis of the stages of transformation of accounting and auditing processes under contemporary digitalization conditions.

## Results and discussion

*The digitalization of accounting and financial reporting is primarily influenced by the digital transformation of business processes.*

The adoption of the Law of the Republic of Kazakhstan «On Informatization» in 2015 in the country marked the beginning of the development of digitalization of the country's economy and contributed to the formation of a new format of interaction between government agencies and Society. According to official data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2023 (stat.gov.kz), the number of organizations using the Internet portal in the period from 2016 to 2021 (available official data) grew every year, as shown in the graph (Figure 1).

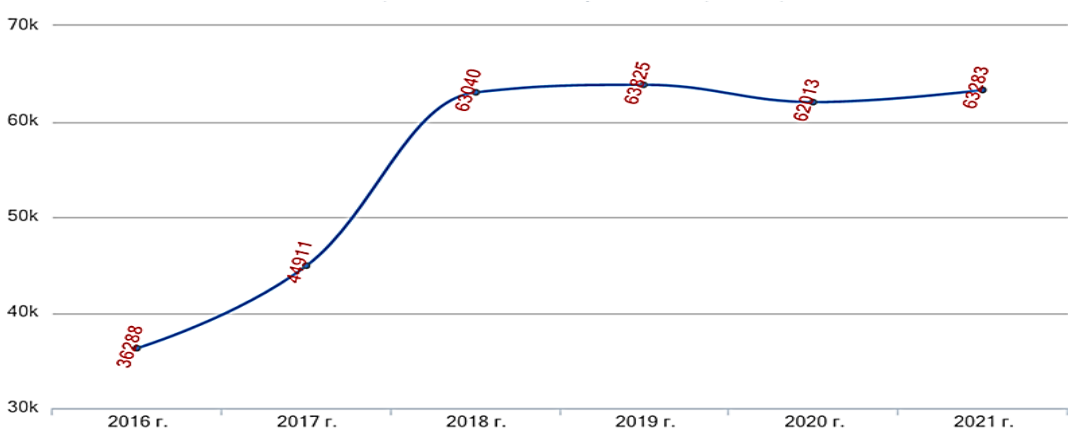


**Figure 1** – Number of organizations using the Internet portal for the period 2016 – 2021
Note – compiled by the authors based on the source Bureau of National Statistics
of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan

It should be noted that the analysis uses the available official data on statistics of the Republic of Kazakhstan, therefore this study describes general trends in the field of application of information resources in Kazakhstani companies.

Having studied the statistics, we see that every year in our country more and more companies are involved in the information process. As evidenced by the growth in the number of organizations using the Internet portal, if in 2016 the number of such companies was 36.3 thousand companies, in 2021 their number increased almost 2 times and amounted to more than 63 thousand units. The peak of growth was in 2019, a possible reason for the growth was the pandemic, when many companies switched to a remote work format. Unfortunately, official statistics do not provide official data for 2022-2024, and therefore it is difficult to imagine what the state is now. Nevertheless, it can be concluded that the pace of digitalization is growing. This is evidenced by statistics by region (see Figure 2).

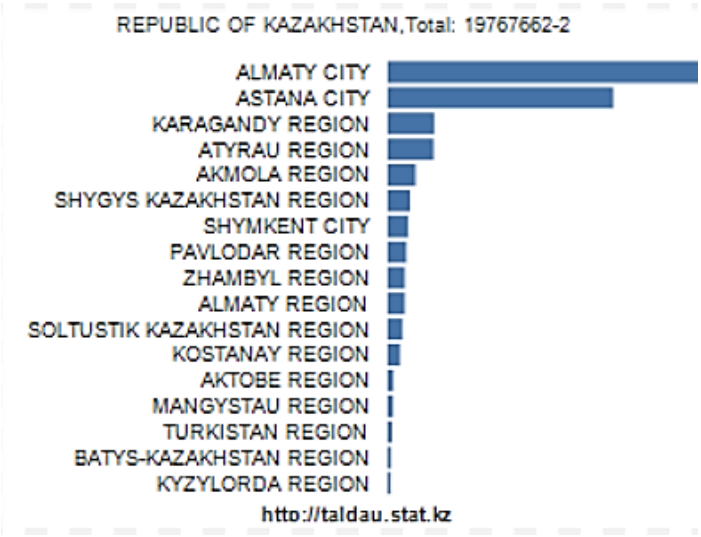


**Figure 2** – Rating of the application of digital technologies in the regions of the Republic of Kazakhstan for 2023
Note – compiled by the authors based on the source Bureau of National Statistics
of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan

As can be seen from the graph, official statistics confirm that in every region of the country, the process of digitalization development is underway, which will entail the transformation of accounting and auditing processes.

*Currently, the advancement of accounting and reporting within the framework of digitalization encompasses several key areas.* (Figure 3):

1) the use of digital twin technology;

2) robotization of accounting operations;

3) using the idea of blockchain and the XBRL International language.

The first element of the accounting pyramid shown in Figure 3 – the reflection of transactions by primary documents is digitalized using digital twin technology. This method allows using sensors to create «live assets» that automatically generate primary documents for all economic transactions.

The main advantages of digital document management are presented in Figure 4. Business processes increasingly use electronic document management (EDM). Large and small companies are completely switching to paperless office work, as they see legal, analytical and business significance in this.

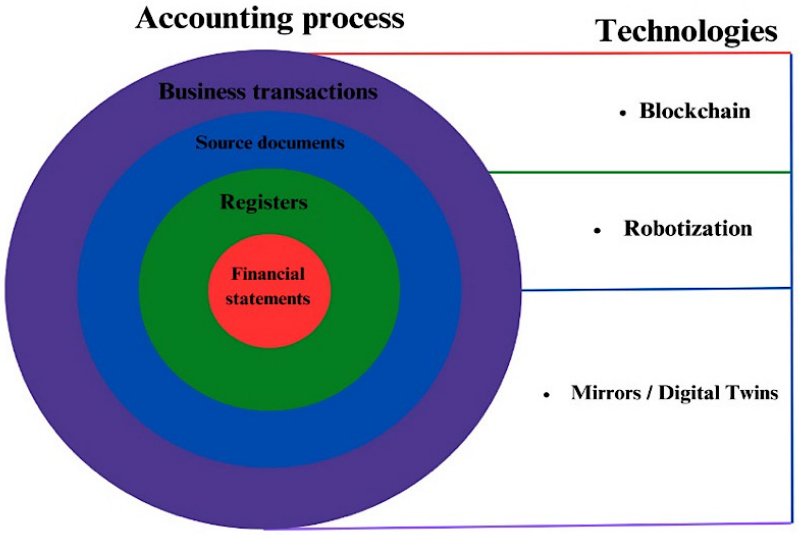


**Figure 3 –** Directions of digitalization of accounting and reporting
Note – Compiled by the authors

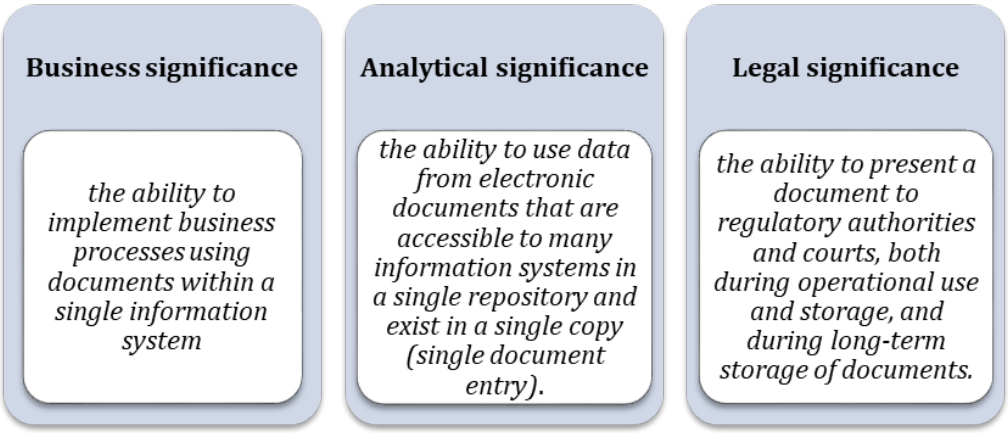


**Figure 4** – Key benefits of digital document management
Note – compiled by the authors

In this case, electronic documents have legal force because:

1) various types of electronic signatures and technologies for their application are used;

2) storage and use in related information systems in the mode of operational access is in place;

3) long-term storage mode is in place;

4) the format of document presentation is changed (from paper to electronic, from electronic to paper).

It is important to note that the introduction of electronic digital signature (EDS) has become widespread in the Republic of Kazakhstan as a way of digitalizing accounting. According to the Law of the Republic of Kazakhstan «On Electronic Document and Electronic Digital Signature», EDS is equivalent to a handwritten signature and entails the same legal consequences under certain conditions. In addition, this provision recognizes the admissibility of using foreign EDS on the territory of the Republic of Kazakhstan. (adilet.zan.kz, 2003).

Below in Figure 5 are presented the types of electronic signature. In international practice in electronic document management, three types of signature can be used: simple, enhanced unqualified and enhanced qualified. The options for using an electronic digital signature can be very diverse (see Table 1).

**Table 1 –** Options for using an electronic signature

| TYPES OF ELECTRONIC SIGNATURE | TASKS | CONDITIONS OF LEGAL FORCE |
|---|---|---|
| Simple Electronic Signature (SES) | Approval of internal documents not related to financial liability, coordination of documents | Presence of agreements between the parties. |
| Enhanced Unqualified Electronic Signature (UNES) | Authorization of external exchange documents and alignment of documents. | Presence of agreements between the parties |
| Enhanced qualified electronic signature (EQES), including cloud-based | Formal external document exchange with third parties. A cloud-based electronic signature is utilized in situations where using specialized software at an employee's workstation is not feasible or cost-effective, and where it's impractical to store electronic signature keys. | Without additional agreements, until the expiration of the certificate |
| Improved Enhanced Qualified Electronic Signature (IEQES) | A single archive of electronic documents with the ability to submit documents for inspection by regulatory authorities and to the court | Without additional agreements, during the period of validity of the document format and legitimate cryptography |
| Note – Compiled by the authors, source: adilet.zan.kz | | |

The next direction of accounting and reporting transformation within the framework of digitalization is the so-called robotization of accounting processes.

Robotization can be applied in the processing of various types of accounting operations implemented through the preparation of registers.

Digitization of accounting operations takes the form of robotization of the accounting function. A robot (chatbot) is a virtual workplace that executes algorithms according to a given scenario.

The process of identifying opportunities for automation starts with evaluating all current accounting procedures. Listed below are some criteria used to assess the advantages of automation for a business: a heavy workload, particularly in manual processing, the repetitive nature of standard tasks, and high labor intensity stemming from outdated and rigidly structured processes. A considerable portion of accounting tasks fits these criteria. The primary phases of automating accounting operations are illustrated in Figure 6.

Formation of electronic reporting is the next direction of transformation of the accounting process. Modern technologies offer the formation of reporting based on the digital standard of open international financial reporting XBRL and blockchain technology.

We believe that utilizing blockchain for reporting will enable tracking at different stages, such as before and after an audit, and before and after error corrections. This enhances the capabilities for users. Figure 7 illustrates the development cycle of blockchain technology.

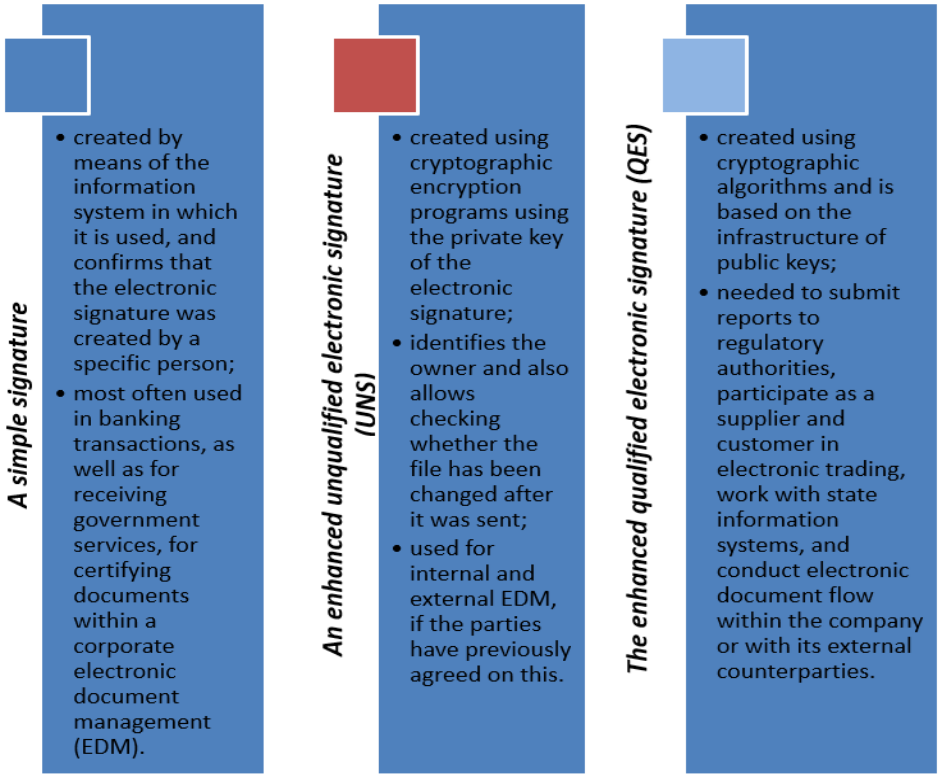


**Figure 5** – Types of electronic signature
Note – compiled by the authors

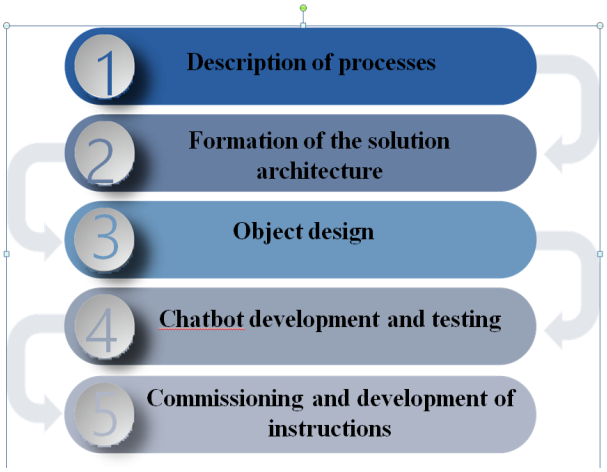


**Figure 6 –** Main stages of robotization of accounting operations
Note – compiled by the authors

Blockchain 1.0 mainly pertains to cryptocurrencies, which are utilized in a range of financial applications, such as transfer systems and digital payments. A new development has arisen from cryptocurrency transactions: crypto assets, which exhibit features of both intangible assets and financial investments. A key attribute of cryptocurrency is that it does not have a denomination, depends on cryptographic security, and employs wallets for conducting transactions; furthermore, the generation of cryptocurrency takes place through a process called mining.

Blockchain 2.0 is associated with smart contracts, which enable entire sectors of economic, market, and financial applications built on blockchain technology to engage with various financial instruments, including stocks, bonds, futures, mortgages, titles, smart assets, and smart contracts. The advancement of smart contracts promotes the full automation of transaction accounting and creates a new transparent information landscape for developing innovative organizational structures of capital through intellectual capital.

In contrast, Blockchain 3.0 represents the concept of smart companies that go beyond mere monetary transactions, finance, and markets. A smart company exemplifies a unique organizational model of ownership.

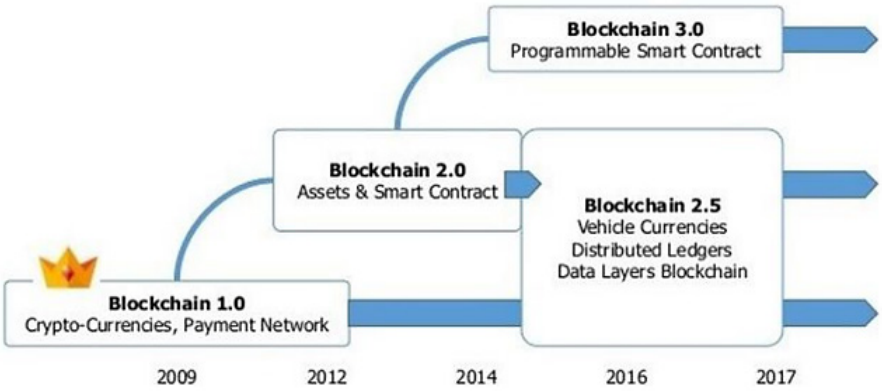


**Figure 7** – Development of blockchain technology
Note – based on the source (Tapscott D., Tapscott A., 2018)

The process of digitalization significantly influences not only accounting practices but also the techniques and methods utilized in auditing. The audit mechanism is compelled to automate its processes, particularly with the emergence of integrated reporting that highlights the utilization of national resources.

It is important to emphasize that auditing encompasses more than just verifying financial statements; its primary mission is to provide independent and objective oversight, assess the targeted and legal nature of asset expenditures, and evaluate the appropriateness and effectiveness of management decisions related to resource utilization, including national resources. Consequently, I would like to draw attention to a specific type of professional audit activity that focuses on enhancing the efficiency of national resource management, particularly in areas such as public finances, production, and natural, human, and informational resources.

With the advent of digital technologies, the verification of the intended use of national resources has become much faster and more efficient. The productivity of auditors has increased, while the requirements for professional knowledge have also increased.

Auditor competencies should be adapted to market changes and should include such skills and abilities as the use of cloud computing, big data, blockchain and other IT trends of global digitalization. All this affects the quality of audit in the modern conditions of digitalization. Issues of high-quality audit have repeatedly become the subject of discussion among many scientists and practitioners.

In the past, digital technology audits (IT audits) were usually limited to identifying the types of information technology (IT) available and nothing more. Nowadays, with the growing role of IT in the business environment, the frequent use of the term «information» and the impact of information on business expansion, profitability growth, resource management, etc., audit requirements have increased. In recent years, technology audits and information systems audits have been used, which has influenced the change in the forms and methods of auditing (Anjum, et al., 2024).

Among the works devoted to the study of the impact of digitalization on audit and its quality, three studies should be highlighted (Tiberius, & Hirth, 2019; Güngör, & Adiloğlu 2019); and Schreuder, & Smuts, 2023). The study of these works allowed us to conclude that, among other factors in the devel-

opment of audit, two main trends in global business should be highlighted: digital transformation and strengthening of cybersecurity.

From this, we can infer that the quality of audits improves in the context of digitalization when an assessment is conducted to determine the impact of digital technologies on resource management, along with verifying their accuracy, efficiency, and reliability during the audit process.

This is a set of complex management, audit and technological actions that examine (check) the consequences, as well as the risks of using digital technologies, and ultimately assess their impact on the efficiency of national resource management. The digital technology market is constantly evolving, information is dynamic, which means that the requirements for auditors performing the audit (IT auditors) are always evolving and increasing. IT audit can and should ensure a more reasonable use of national resources. To achieve this, the reliability of internal controls within information systems is evaluated, focusing on how national resources are allocated and utilized. This involves assessing and analyzing management systems, procurement policies, and contracts, as well as ensuring effective change management.

In contemporary circumstances, IT auditors are expected to ascertain whether the internal control system has been properly designed and whether safeguards are implemented to ensure the safety and, crucially, the efficient use of national resources.

To do this, IT auditors are recommended to check and analyze the following three components of digital systems that manage these resources:

- availability (establishing how accessible information on the use of resources is);
- security (determining the degree of availability of resource data for authorized persons and all other employees of the organization);
- integrity (checking the accuracy, timeliness and reliability of resource data from information systems).

Thus, this will allow the IT auditor to give a full assessment of the security and reliability of the information system in relation to data on national resources. In addition, during the audit, it is necessary to check whether the company complies with the relevant legislation in the field of management and security of information data on resources. Based on this, the auditor's task is to assess compliance with applicable laws, rules and standards in force in the context of global digitalization.

As a result, IT auditors are responsible for assessing the security and reliability of the information system based on resource data. In addition, the audit assesses whether the company complies with relevant laws and regulations regarding the management and security of resource information data. In this regard, the task of auditors is to provide their assessment of compliance with current legislation, regulations and standards in force in the context of global digitalization.

**Conclusion**

In conclusion, it is crucial to acknowledge that the digitalization of economic processes will profoundly alter accounting and auditing practices, requiring substantial changes in educational focus in these areas and the adoption of innovative tools.

The integration of blockchain technology is set to significantly affect the organizational frameworks of capital in the digital era.

The social consequences of digitalization are already affecting employment in higher-level positions and driving changes in educational systems.

Additionally, the digitalization of accounting is shaping the structure and features of software products, such as 1C, by integrating technologies like XBRL, blockchain, robotics, and digital twins.

The transformation of accounting processes related to the management of national resources consists of two main phases: digitization and implementation.

The first stage is digitization:

- internal document flow processes, and
- key accounting document flow processes.

The second stage involves the implementation and further development of:

- external (applied) digital document flow and electronic reporting;
- operational and archival services.

The audit activity on the use of national resources in the context of digitalization should include the following steps:

1. Analysis of the current state of the use of digital resources and the level of development and skill in the use of IT in the system of using information technologies.

2. Assessment of possible risks in the use of digital resources available in the information system for the use of national resources.

3. Providing recommendations for solving the identified problems, for example, improving the internal control system when using digital or other types of national resources.

The new digital economy requires updated accounting and auditing. And despite the fact that to-

day there are no accounting and auditing standards regulating the procedure for accepting for accounting or checking, for example, digital assets. Accounting and auditing are still among the factors influencing a business that is undergoing active digitalization.

Digitalization is advancing rapidly and is set to permeate all sectors and regions worldwide, including Kazakhstan. This trend is largely attributed to advancements in science and technology, coupled with substantial government support for the adoption of digital technologies.

As new technologies emerge, numerous economic processes within the country are evolving. Managing national resources necessitates swift, precise, and timely decision-making, which can be enhanced and streamlined through modern tools and techniques. These methods encompass the adoption of digital technologies in accounting and auditing, such as cloud servers, specialized software, blockchain, and electronic signatures. Furthermore, new tools and updated software are continually being developed, broadening the range of possibilities. Therefore, ongoing research into the entire spectrum of these processes is both feasible and essential.

**Research Limitation**: issues with insufficient or poor-quality statistical data for in the field of application of information resources in Kazakhstani companies limit the full interpretation of these indicators, which are indirectly related to the study's objectives.

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