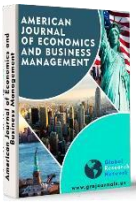


American Journal of Economics and Business Management

Vol. 8 Issue 7 | pp. 3406-3410 **| ISSN:** 2576-5973

Available online @ https://www.globalresearchnetwork.us/index.php/ajebm

Article

The Impact of Digital Technologies on the Audit Process

Muydinov Erkin Dzhamaldinovich[1]

1. Tashkent State University of Economics Doctoral candidate, Ph.D., Associate Professor

Abstract: This article examines the issues of introducing digital technologies into audit practice and their impact on the audit process and methodology. In recent years, digital technologies have significantly reshaped the landscape of financial auditing. The integration of tools such as artificial intelligence (AI), blockchain, data analytics, and robotic process automation (RPA) has allowed auditors to improve the accuracy, efficiency, and timeliness of audit processes. This paper explores the extent to which digital technologies are transforming traditional audit practices, focusing on the opportunities they present as well as the challenges that come with their adoption. Emphasis is placed on how these technologies enhance risk assessment, automate routine tasks, and improve decision-making through real-time data analysis. Moreover, the paper examines the skills gap among auditors and regulatory implications associated with digital auditing. By analyzing recent literature and case studies, this study provides a comprehensive understanding of the evolving audit ecosystem and the strategic role of digital innovation in shaping its future. The findings suggest that while digital technologies can greatly enhance audit quality and efficiency, their implementation must be accompanied by proper training, ethical considerations, and an updated regulatory framework to ensure reliability and transparency.

Keywords: Audit, Legislation, Digital Technologies, E-Commerce, International Financial Reporting Standards, Artificial Intelligence

1. Introduction

Today, if we look back at our recent history, we can see that it has been 25 years since our country began transitioning to digital technologies. Indeed, our republic started working in this direction as early as the year 2000[1]. As a result of these efforts, by the beginning of 2020, nearly 60 laws, Presidential decrees, Presidential resolutions, and Cabinet of Ministers decisions had been issued regarding the application of information and communication technologies (ICT) in our country's economy.

Among these, special attention should be given to documents such as the "Comprehensive Program for the Development of National Information and Communication Systems in the Republic of Uzbekistan for 2013–2020," the "Action Strategy for the Five Priority Areas of Development of the Republic of Uzbekistan for 2017–2021," and the "Digital Uzbekistan – 2030" Strategy. In the global e-Government rankings, Uzbekistan held the 80th position among 200 countries in 2016, and by the end of 2024, it had achieved the 63rd position[2]. Furthermore, in the ranking for readiness to use artificial intelligence, Uzbekistan ranked 70th. In recent years, due to Uzbekistan's transition to a digital economy, the process of investing in the development of online business platforms has significantly accelerated. Currently, e-commerce, which accounts for about 4% of the country's total trade turnover and is growing rapidly, was first regulated by law in 2004. Relevant amendments and revisions were made to this law in

Citation: Dzhamaldinovich M. E. The Impact of Digital Technologies on the Audit Process. American Journal of Economics and Business Management 2025, 8(7), 3406-3410.

Received: 30th May 2025
Revised: 17th Jun 2025
Accepted: 30th Jun 2025
Published: 19th Jul 2025

2015 and 2022[3]. Today, there are 50 registered marketplaces on the E-commerce platform with an annual turnover of no less than 300 million USD. In 2023, the volume of Uzbekistan's e-commerce market reached 543 million USD. By 2027, this turnover is expected to grow to 1 billion USD.

2. Materials and Methods

This research employs a qualitative literature review approach to investigate the influence of digital technologies on the audit process. A comprehensive review of peer-reviewed journal articles, industry white papers, conference proceedings, and professional audit reports was conducted, focusing on publications from 2018 to 2024[4]. Key databases such as Scopus, ScienceDirect, SpringerLink, and Google Scholar were used to source relevant materials. Search terms included "digital transformation in auditing," "blockchain audit," "AI in financial audits," "data analytics in auditing," and "RPA in external audit[5]."

To ensure the relevance and quality of sources, only studies from reputable journals such as Accounting, Organizations and Society, Journal of Information Systems, and The International Journal of Auditing were included. The literature was thematically analyzed to identify recurring patterns, innovations, and concerns related to the integration of digital technologies into auditing workflows. This thematic framework was based on three primary categories: digital tools and their functions in auditing, benefits and challenges, and regulatory and skill-based implications.

In addition, this study adopts a case-based comparative analysis to highlight how leading audit firms (e.g., PwC, Deloitte, KPMG, EY) have implemented digital solutions in real-world settings[6]. These cases were drawn from public domain reports and professional publications, serving as illustrative examples of the practical application of technologies like AI-powered audit assistants and blockchain validation tools. The methodological aim is not to quantify impact but to synthesize existing knowledge and highlight key developments that inform both academic inquiry and professional practice.

3. Results and Discussion

According to the new regulations, currently only legal entities are permitted to engage in e-commerce. Both international and national practices indicate that small and medium-sized enterprises (SMEs) have been the most successful in this field. At present, the following small business sectors are actively utilizing electronic commerce:

1. Internet trade (marketplaces, aggregators, online stores);
2. Microcredit organizations;
3. Tourism-related service providers;
4. Book and magazine sales;
5. Advertising businesses;
6. Education sector, etc[7].

In addition, e-commerce is increasingly becoming a channel for manufacturing enterprises to sell their products, provide services, and perform operations through their official websites. In such cases, under the International Financial Reporting Standards (IFRS) for SMEs, if the small enterprise can separate the capital expenditures incurred for creating the website from other assets, maintain control over it, and it is probable that economic benefits will be derived from its use, the website shall be recognized as an intangible asset subject to audit[8]. When auditing the operations of small and medium-sized enterprises (SMEs) that run their businesses using digital technologies and artificial intelligence, auditors must not only verify accounting records and financial statements in accordance with applicable standards but also examine whether the enterprise complies with dozens of official regulations governing the use of ICT and the conduct of electronic commerce. The "Big Four" auditing firms have made significant progress in automating

auditing processes and integrating artificial intelligence technologies over the past 7–10 years[9]. For instance, since 2018, KPMG has been using IBM's Watson Natural Language Understanding AI system; Deloitte utilizes the Argus technology and Optix Analyzer based on Kira Systems' AI platform; and EY employs its proprietary Helix and Canvas analytics tools[10]. Reportedly, the application of these technologies has led to a 30–40% reduction in the likelihood of errors in financial reporting and a 20–25% decrease in auditing costs.

The introduction of digital technologies into auditing has fundamentally transformed its nature, purpose, and core functions. Traditionally centered on the analysis of historical data, auditing is now rapidly being replaced by "digital auditing", which operates in real-time and is no longer limited to verifying the accuracy of financial reports[11]. Instead, it involves conducting a comprehensive analysis of a company's operations with the aim of evaluating the client's business based on its life cycle and providing data to support strategic planning.

Just imagine: IBM's Watson artificial intelligence system has the capability to read and process up to one billion documents in a single minute. The incorporation of technologies capable of processing data at such speed and performing deep analysis is expected, in our view, not only to lead to a drastic reduction in the number of auditors in the near future, but also to push classical audit practices—and auditors as we know them—into obsolescence[12].

From the study of international experience, we have concluded that the integration of artificial intelligence and other digital technologies into the auditing profession brings with it both significant advantages and a range of new challenges.

The benefits of using digital technologies in the auditing process include:

1. Providing high-quality services to clients in a shorter time, thereby improving audit firm competitiveness and expanding their presence in the market;
2. Giving auditors a better foundation for understanding clients and their business processes;
3. Significantly reducing manual labor by enabling the processing of large volumes of data in a short period;
4. Improving the quality and efficiency of audit inspections;
5. Greatly reducing serious human errors that could occur during the audit process;
6. Enhancing the reliability of management decisions by providing clients with more evidence-based analytical results[13].

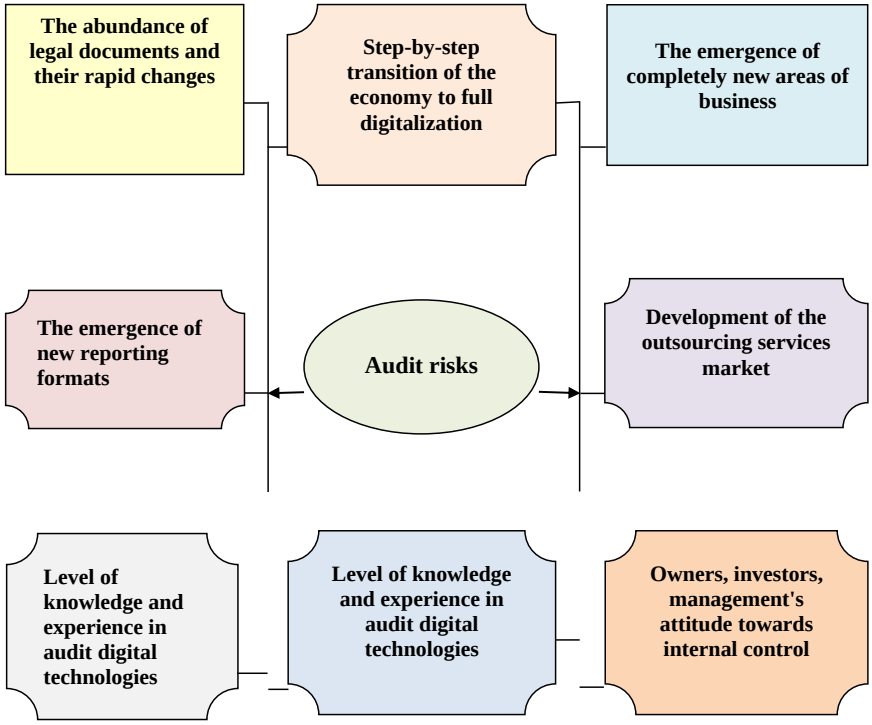
One particularly noteworthy development is the emergence and implementation of new concepts such as "Digital Audit" and "Virtual Audit," which are expected to gain firm ground in the near future. However, while the use of such modern technologies offers benefits such as time savings, the ability to process massive volumes of information in a short period, error reduction, and the opportunity to perform audits remotely or continuously online, it also introduces entirely new factors that significantly increase audit risk[14]. These risks arise from reliance on complex systems, cybersecurity vulnerabilities, data integrity concerns, and the challenge of ensuring transparency and accountability within automated environments.

Among the most critical factors influencing digital auditing risk, the following can be identified:

1. The rapid development of technologies enabling electronic commerce is often not matched by the pace of legal regulation, causing legal practices to lag behind;
2. If proper precautions are not taken, the likelihood of cyberattacks targeting client servers connected to the Internet increases, potentially leading to the theft or alteration of sensitive data;

3. Due to the rapid evolution of technology and equipment used in electronic commerce, it becomes increasingly difficult for employees to maintain a consistently high level of expertise and efficient usage;
4. New forms of fraud are emerging within enterprises that use digital technologies, presenting unprecedented risks to auditors;
5. Auditors are now required to continuously update their knowledge of the legal framework governing electronic commerce, the digital technologies applied in this field, and the specific software solutions developed for such purposes[15];
6. The growing application of artificial intelligence in auditing, coupled with the use of big data, blockchain, XBRL reporting systems, and cloud computing, is resulting in increased demand for specialists with strong IT expertise;
7. The high cost of digital technologies and specialized audit software, along with the substantial financial investment and time commitment required for auditors and audit firms to master and implement these tools, pose further challenges.

In our view, it is essential to systematically group and study the risk factors that arise from the use of digital technologies in auditing, as they directly impact audit risk, see Figure 1.



Source: Diagram developed by the author

Figure 1. Groupings of factors affecting audit risk in the context of digitalization[16].

This diagram effectively highlights that audit risks are multifactorial—arising from external regulatory shifts, internal technological readiness, changes in business landscapes, and human attitudes towards compliance and controls. Managing these risks requires:

a. Continuous training in digital tools,
b. Staying current with evolving standards and legal frameworks,
c. Reinforcing strong internal control mechanisms, and
d. Strategic response to the digital economy's demands.

4. Conclusion

The audit profession is undergoing a profound transformation driven by the advent of digital technologies. Tools such as artificial intelligence, blockchain, and data analytics are not merely supplementary aids—they are redefining the way audits are planned, executed, and reported. Auditors can now analyze entire data populations rather than samples, detect anomalies in real time, and offer more insightful risk assessments, leading to enhanced audit quality and stakeholder confidence. However, this digital shift comes with its own set of challenges. Among them are data privacy concerns, the steep learning curve for auditors, integration complexities, and a regulatory environment that is still catching up. Furthermore, ethical implications surrounding the use of AI in judgment-based tasks raise important questions about responsibility and oversight.

To navigate these changes successfully, audit firms must invest in upskilling their workforce, fostering a culture of continuous learning and innovation. Regulatory bodies, on the other hand, must collaborate with industry experts to develop standards that promote responsible use of digital tools without stifling innovation.

REFERENCES

[1] E. Brynjolfsson and A. McAfee, The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. W.W. Norton & Company, 2014.

[2] KPMG, 'Digital Transformation in Audit'. KPMG Global, 2021.

[3] M. Alles and G. L. Gray, 'The impact of technology on auditing: A research synthesis', J. Account. Lit., vol. 44, pp. 1–34, 2020.

[4] EY, 'The future of audit is here'. Ernst & Young Global, 2020.

[5] J. Kokina and T. H. Davenport, 'The role of AI in accounting: A review of current applications and future directions', J. Emerg. Technol. Account., vol. 19, no. 1, pp. 1–15, 2022.

[6] PwC, 'The Digital Auditor: Reimagining the future of audit'. PricewaterhouseCoopers, 2023.

[7] IAASB, 'Technology Working Group Publication: The Impact of Technology in Audit'. International Auditing and Assurance Standards Board, 2020.

[8] N. Sutton, 'How AI is revolutionising accounting', Account. Age, 2024.

[9] M. G. Alles, 'Drivers of the use and facilitators and obstacles of the evolution of Big Data by the audit profession', Account. Horiz., vol. 29, no. 2, pp. 439–449, 2015.

[10] F. Tang and K. Karim, 'Blockchain and auditing: A literature review of the current state and future research opportunities', J. Emerg. Technol. Account., vol. 18, no. 2, pp. 37–59, 2021.

[11] N. V. S. Ratzinger-Sakel and M. Ezzamel, 'Digital transformation and audit quality: The role of auditor judgment in an AI environment', Account. Bus. Res., vol. 50, no. 5, pp. 447–469, 2020.

[12] K. Yoon, L. Hoogduin, and L. Zhang, 'Big Data as complementary audit evidence', Account. Horiz., vol. 29, no. 2, pp. 431–438, 2015.

[13] D. Appelbaum, A. Kogan, and M. A. Vasarhelyi, 'Big Data and analytics in the modern audit engagement: Research needs', Audit. J. Pract. Theory, vol. 36, no. 4, pp. 1–27, 2017.

[14] M. Cao, R. Chychyla, and T. Stewart, 'Big data and AI in auditing: Opportunities and challenges', J. Inf. Syst., vol. 35, no. 2, pp. 45–62, 2021.

[15] Deloitte, 'Tech Solutions for Public Sector Efficiency'. 2021.

[16] H. Issa and A. Kogan, 'A decision support system for team-based audit review planning using data analytics', J. Inf. Syst., vol. 33, no. 3, pp. 61–83, 2019.