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THE USE OF DIGITAL TECHNOLOGIES IN AUDIT: METHODOLOGICAL ASPECTS AND PROFESSIONAL JUDGMENT

The ongoing digital transformation of economic activity has substantially influenced approaches to management, administration, and financial control. Business entities increasingly rely on integrated information systems, automated workflows, and advanced analytical tools to support operational and strategic decision-making. These changes have led to a gradual reconsideration of audit methodologies, requiring auditors to adapt traditional procedures to a more complex, data-driven environment.

The expansion of digital technologies in audit practice is closely connected with changes in the structure and quality of available information. Financial reporting is now supported by enterprise resource planning systems, cloud-based accounting platforms, and automated administrative processes. As a result, auditors are required to assess not only financial data but also the reliability of systems generating such information. This increases the importance of understanding system architecture, data flows, and internal control mechanisms embedded within digital environments.

Audit data analytics has become one of the most widely used digital tools in modern auditing. By enabling the examination of entire datasets, analytics tools allow auditors to move beyond traditional sampling approaches. This enhances the ability to identify unusual transactions, recurring patterns, and inconsistencies across reporting periods. In practice, the use of analytics contributes to a more informed risk assessment and supports the selection of audit procedures that are better aligned with the specific risk profile of the audited entity.

At the audit planning stage, digital analytical procedures provide valuable insights into business performance and financial trends. Automated comparisons of financial and non-financial indicators assist auditors in identifying areas that require increased professional attention. Such procedures support the development of audit strategies that are responsive to changes in business models, organisational structures, and external economic conditions. Consequently, audit planning becomes more flexible and focused on areas with higher inherent risk.

During the execution phase of the audit, digital tools support substantive testing and the evaluation of internal controls. Automated testing procedures increase consistency and reduce the likelihood of manual errors. Continuous auditing techniques allow certain controls and transactions to be monitored throughout the reporting period rather than solely at year-end. This approach is particularly relevant for organisations with high transaction volumes or decentralised administrative functions.

The use of artificial intelligence technologies in management and administration represents a further stage of digital development. AI-based systems are increasingly applied in areas such as budgeting, forecasting, performance evaluation, procurement management, and compliance monitoring. These systems assist management by processing large volumes of structured and unstructured data, identifying correlations, and generating predictive insights. From an audit perspective, the growing reliance on AI changes both the nature and the sources of audit evidence.

Artificial intelligence also influences the design and operation of internal control systems. Automated approval processes, anomaly detection mechanisms, and predictive risk models may strengthen control environments when appropriately governed. However, the complexity of AI-based systems may reduce transparency, particularly when decision-making logic is not easily interpretable. Auditors must therefore assess the governance frameworks surrounding AI usage, including oversight responsibilities, data quality controls, and procedures for monitoring system performance.

In audit practice, AI-supported analytical tools enhance risk assessment by identifying relationships and patterns that may not be evident through conventional procedures. The ability to analyse financial and operational data simultaneously supports a more holistic understanding of business activities. This is particularly important in highly automated administrative environments, where managerial decisions are increasingly supported by algorithmic models rather than purely human judgment.

Despite the advantages associated with digital technologies and artificial intelligence, professional judgment remains a central element of the audit process. Digital tools provide indicators rather than definitive conclusions. Auditors are required to interpret analytical results, evaluate management explanations, and determine whether identified exceptions represent material misstatements or acceptable business outcomes. Professional scepticism is especially important when management relies heavily on automated systems to justify financial results.

Another critical issue relates to the risk of over-reliance on digital tools. Insufficient understanding of system assumptions, data limitations, or model design may lead to inappropriate audit conclusions. Auditors must therefore ensure that the use of digital and AI-based tools is aligned with audit objectives and that their limitations are clearly documented. Adequate documentation is essential to support audit judgments and to demonstrate compliance with auditing standards during inspections and quality reviews.

The effective integration of digital technologies into audit practice requires continuous professional development. Auditors must develop competencies in data analysis, information systems, and digital risk assessment alongside traditional accounting knowledge. Professional organisations and audit firms play an important role in supporting this development by updating training programs and providing methodological guidance on the use of digital tools and artificial intelligence in auditing.

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From a regulatory perspective, the increasing use of digital technologies raises questions regarding transparency, accountability, and ethical responsibility. Issues related to data governance, bias in automated models, and responsibility for system-generated decisions must be addressed within both management practices and audit methodologies. Clear regulatory guidance is necessary to ensure consistent application of auditing standards in digital environments.

In summary, digital technologies and artificial intelligence have become integral components of modern management, administration, and audit practice. Their appropriate use enhances audit effectiveness, supports more accurate risk assessment, and improves the quality of audit evidence. At the same time, these technologies do not replace professional judgment. The reliability of audit conclusions continues to depend on the auditor's ability to critically evaluate digital outputs, apply professional scepticism, and adhere to ethical and professional standards.

References

1. International Auditing and Assurance Standards Board. International Standards on Auditing (ISA). IFAC, 2023.
2. Appelbaum D., Kogan A., Vasarhelyi M. The Impact of Data Analytics on the Audit Process. *Accounting Horizons*, 2017.
3. European Commission. Digitalisation and the Audit Profession. Brussels, 2022.
4. Sutton S., Holt M., Arnold V. Artificial Intelligence and the Transformation of the Accounting Profession. *Journal of Information Systems*, 2016.