

**FEATURES OF THE APPLICATION OF THE INTERNATIONAL CODE OF ETHICS FOR PROFESSIONAL ACCOUNTANTS IN THE CONTEXT OF DIGITALIZATION**

CZU: [174:657]:004.78

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**Abstract:** In the context of the acceleration of the digitalization of the economy, issues related to the implementation by auditors of the principles established by the International Code of Ethics for professional accountants (Code of Ethics) meet new challenges. First of all, this is due to the development of the technological landscape of the digital economy, in conditions when such new elements as the Internet of Things (IoT), digital 5G, quantum computing, etc. appear, auditors are required to have sufficient knowledge when auditing financial statements of crypto assets and other digital economy tools. In this article, the authors analyze the technological landscape of the digital economy, the risks that arise when an auditor works in terms of violating the principles established by the Code of Ethics, and also formulate proposals to avoid or minimize such risks.

**Keywords:** audit, International Code of Ethics for professional accountants, digital economy, principle of independence

**JEL Classification:** M42**Introduction**

The International Ethics Standards Board for Accountants (IESBA) on September 8, 2022 published the Guide to the International Code of Ethics for Professional Accountants (including the International Standards of Independence) (International Code of Ethics for Professional Accountants, n.d.). This guide replaces the corresponding 2021 edition and includes the following changes effective December 2022:

- ✓ *amendments to the Code related to quality management, which were issued as a result of the completion of the development of quality management standards of the The International Auditing and Assurance Standards Board (IAASB),*
- ✓ *revision of the provisions of the Code of Ethics relating to non-assurance services (NAS) and related to payment,*
- ✓ *changes to ensure the objectivity of the quality controller (EQR) and other relevant inspectors.*

However, this Code of Ethics does not disclose the specifics of the impact of digitalization on the auditor's implementation of the fundamental principles. In this regard, the Technology Group of the International Ethics Standards Board for Accountants (IESBA) (IESBA conducted a study on the impact of IT technologies on the accounting, assurance, and finance functions.

International Standard on Quality Management (ISQM) 1, Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements establishes requirements and application materials related to corporate culture in the context of the firm's responsibilities for developing, implementing and using a quality management system for audits or reviews of financial statements or other assurance engagements or related services, which is primarily related to independence: in thought and action.

The relevance and importance of the overarching principles and specific provisions of the International Code of Ethics for Professional Accountants (including the International Standards of Independence) (Code of Ethics) in establishing ethical barriers for professional accountants when

faced with opportunities and challenges in their work, and in particular as a result of rapid digitalization. (International Code of Ethics for Professional Accountants, n.d.)

It is important to consider informational aspects and ethical implications when making decisions about working with clients and performing tasks with innovative technologies such as artificial intelligence, blockchain and cloud technologies.

Important issues to consider through an ethical lens are issues including data management, cybersecurity, and trust in experts. Considering such important issues, one should focus on recommendations regarding the application and compliance with the Code of Ethics in the context of digitalization.

Research methodology includes both general scientific and specialized methods. Using general scientific methods: study and generalization, synthesis and analysis, analogy and classification, the author studies and conducts a general analysis of the subject of research. Specialized methods are directly related to the specifics of the subject being studied.

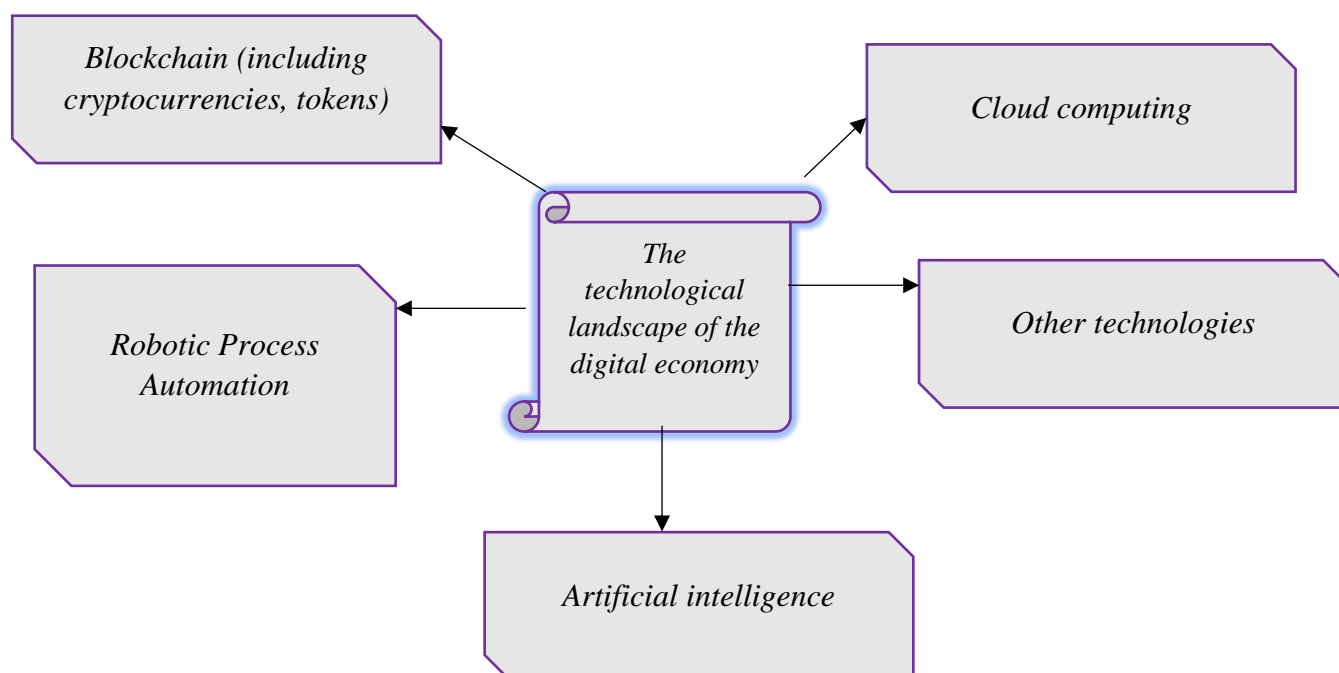
The main purpose of the study is to analyze the technological landscape of the digital economy and its impact on the requirements imposed by the Code of Ethics for auditors.

To achieve this goal, the authors analyzed the technological landscape of the digital economy, as well as its elements, such as: robotic automation of RPA processes, artificial intelligence (AI), etc., which have a significant impact on the auditor's compliance with the fundamental principles of the Code of Ethics.

The analysis made it possible to identify aspects of the negative impact of elements of the technological landscape of the digital economy on the implementation of the principles of the Code of Ethics by auditors, as well as to submit proposals to improve the situation.

### Analysis

Issues related to the application of the Code of Ethics in the context of accelerating digitalization are currently the most relevant for auditors. Consider: what points related to digitalization should be taken into account by the auditor.



**Fig. 1. The technological landscape of the digital economy**

Source: developed by the author based on the materials of IESBA Technology working group phase 2 report (IESBA Technology working group phase 2 report, n.d.)

The International Ethics Standards Board for Accountants (IESBA) has published the final report of its working group, the IESBA Technology Working Group report. Some provisions of this report are already taken into account when developing changes to the Code of Ethics related to technology. At the same time, in the IESBA Technology working group phase 1 report 2 (IESBA Technology working group phase 2 report, n.d.), the following issues related to the Conclusions and Recommendations For Improving the Code of Ethics were considered: suitability of the Fundamental Principles for the Digital Age:

- ✓ *Inter-related Nature of the Impact of Technology*
- ✓ *Key Principles in AI Ethics Frameworks*
- ✓ *Fairness*
- ✓ *Transparency*
- ✓ *Explainability*
- ✓ *Accountability*
- ✓ *Privacy and Confidentiality*.

At the same time, this report (IESBA Technology working group phase 2 report, n.d.) considered the issues of the auditor's independence in the light of:

- ❖ *technology tools used in an audit,*
- ❖ *technology applications sold to audit clients,*
- ❖ *provision of technology-related non-assurance services,*
- ❖ *modernization of terms and concepts,*
- ❖ *office and workforce mobility,*
- ❖ *financial interest, cryptocurrencies and blockchain,*
- ❖ *data as an asset,*
- ❖ *routine and mechanical tasks,*
- ❖ *long association,*
- ❖ *independence for assurance engagements other than audit,*
- ❖ *review engagements.*

IESBA Technology working group phase 2 report considers issues related to the technological landscape (robotic process automation, artificial intelligence, blockchain (including cryptocurrencies, tokens), cloud computing, as well as their impact on the behavior of the auditor.

When performing tasks, the auditor is faced with robotic automation of RPA processes, also known as software robotics ("bots"), uses automation to perform human tasks, represents digital workers in the enterprise. Banks and financial organizations use RPA technologies to optimize their operations, and they are also used in insurance, retail and healthcare. Large banks, for example, use RPA to automate routine tasks such as checking customers, opening an account, processing requests and tasks aimed at preventing and detecting fraud and money laundering or terrorist financing.

In addition, many financial institutions use RPA to automate manual input and analysis of large amounts of data. These processes entail many identical, routine operations based on rules, which automation simplifies. In the conditions of digitalization, RPA enter data, generate reports, read PDF documents and make invoices, send emails, etc. Accordingly, the demand for positions in areas such as data entry, accounting and administrative support decreases as automation increases. The IESBA Technology working group phase 2 report (IESBA Technology working group phase 2 report, n.d.) indicates that for the accounting profession, in particular, the consequences will be very diverse, and, according to some estimates, automation is likely to affect 94% of the jobs of accountants and auditors in the United States, which will be replaced by automated processes.

When using software robotics, the auditor may face risks that are associated with:

- 1) there was a division of responsibilities, those who write programs and those who administer them,
- 2) the types of transactions that the bot makes,

3) understanding the management of the client of responsibility for the transactions that the bot makes,

4) potential consequences of using bots.

In his activity, the auditor encounters artificial intelligence, which have cognitive abilities similar to human ones. AI-enabled applications are as follows:

- ✓ *statistical and predictive tools,*
- ✓ *language models of text generation,*
- ✓ *analysis and forecast of financial processes.*

Some large audit firms use Artificial Intelligence (AI), for example for:

- *to analyze data from sources such as social networks, e-mail, phone calls, public posting of the client's management, etc., in order to determine the potential risks associated with accepting and continuing to work with the client.*
- *for natural language processing and machine learning to analyze both structured and unstructured information, such as global industry reports, sanctions, news, public forums, etc. to identify relevant audit risks and to detect fraud, money laundering and terrorist financing*
- *audit programs using AI.*

Artificial Intelligence (AI), is neutral, but programs are written by people, and who can introduce a subjective aspect.

In its basic form, a blockchain is a decentralized digital ledger that can be used to register at the level of businesses, governments, etc. Recently, the number of new applications in the field of finance, business, government that use blockchain technology has been growing. Banks lead the way in spending on blockchain, which accounts for nearly 30% of global spending in 2021. The industry's next highest spending on blockchain is process manufacturing and discrete manufacturing, which together account for over 20%. (IESBA Technology working group phase 2 report, n.d.)

Cryptocurrencies such as bitcoin are powered by blockchain technology and are seen as a potential tool to accelerate access to financial services. Recently, when auditing financial reports, auditors have faced a number of difficulties, in particular when verifying Decentralized Finance ("DeFi"), which is a generalizing term for financial services on public blockchains, primarily Ethereum, which do not require paperwork or the involvement of a third party. In fact, this creates a whole digital alternative to traditional financial services, but without the associated costs (for example, offices, salaries of employees of financial institutions). Along with the positive aspects, there are also negative ones, for example: anonymity, ease of use and the ability to circumvent international rules are present in the blockchain system, which leads to the fact that the use of this system contributes to the purchase of illegal goods and is a form of payment for most ransomware attacks.

Due to the dynamic nature of development and changing regulation, as well as the anonymity of users, DeFi also creates risks for money laundering and terrorist financing, as well as user anonymity. At the same time, the anonymity of cryptocurrencies is not absolute, since immutable traces of transactions are created. At the same time, despite the risks, more and more enterprises accept cryptocurrencies as payment and store cryptocurrencies as investments. In addition, there are governments seeking to adopt cryptocurrency as legal tender, El Salvador becoming the first country to adopt cryptocurrency (bitcoin) as legal tender in 2021. Separately, but in this regard, the development of a central bank digital currency (CBDC) – virtual money supported and issued by the central bank is being studied or has been initiated by various governments, including the United States, Britain, India, China, Nigeria and the Bahamas. (IESBA Technology working group phase 2 report, n.d.). CBDC is expected to allow individuals and businesses to send instant payments through their depository institution accounts at a much faster transaction rate compared to traditional transactions (e.g. via Visa, Alipay, etc.) or cryptocurrencies (e.g. Bitcoin).

The use of a blockchain token gives the right to a physical or digital asset, for example, ownership of a share in a company, or a digital piece of art. Investors are increasingly trading and investing in such tokens. Thus, there are 2 types of tokens:

- *service tokens, which provide owners with access to blockchain-based products and services, such as cryptocurrency; or*
- *security tokens, which are traditional assets, such as stocks and shares.*

Due to the variety of information products, the auditor has a problem, primarily related to understanding the processes associated with digitalization. Risks for the auditor in the blockchain system are also related to the fact, that it is impossible to identify affiliated persons and transactions with them. Or does the question of independence arise when auditors buy digital assets from a client, will this be a violation of the Code of Ethics?

Another important point is that accounting, disclosure and regulation of cryptocurrencies is a developing area that creates dynamic complexity for auditors who need to be aware of all changes in this area. For example, as noted in report (IESBA Technology working group phase 1 report, n.d.):

- ✓ *The IFRS Interpretation Committee discussed and concluded in June 2019 that the IFRS 2 standard "Stocks" should be applied when accounting for cryptocurrencies. However, at the conference of the IFRS Foundation in June 2022, it was emphasized that in the future a project will be developed to revise IFRS (IAS) 38 "Intangible Assets", which, among other things, may concern cryptocurrencies.*
- ✓ *In July 2022, IOSCO (International Securities Market Organization) published a roadmap outlining areas of work to study market integrity, investor protection and financial stability risks in relation to crypto and digital assets and decentralized financing.*
- ✓ *The EU Parliament has agreed on draft rules on supervision, consumer protection and environmental sustainability of crypto assets.*
- ✓ *The US SEC has issued a Bulletin dedicated to accounting for obligations to protect crypto assets that an organization owns for users of its platform.*
- ✓ *FASB USA has launched a research project on accounting and disclosure of a subset of digital assets and commodities traded on the exchange.*
- ✓ *AICPA has a practical manual on accounting and auditing of digital assets.*

Cloud computing is a necessary tool for the huge growth of data volume. Enterprises are increasingly using third-party cloud services such as governance, risk management and compliance (GRC), as well as audit management tools to manage and document their controls. In particular, the COVID-19 pandemic has opened up a new opportunity for cloud computing (SaaS - software distribution models in which a cloud provider hosts applications and makes them available to end users via the Internet). Thus, the software provider enters into a contract with the owner of cloud services to host his application or, alternatively, in larger enterprises, the cloud service provider may also be a software provider.

Using the cloud eliminates the costs of purchasing, operating and maintaining local hardware and software, as well as setting up and running local data processing servers, which provides faster solutions to problems by changing the service agreement for IT resources from the supplier as needed (i.e. more or less computing power, storage, bandwidth). Cloud computing simplifies data backup, disaster recovery, and business continuity because data can be mirrored across multiple backup repositories on a cloud service provider's network.

At the same time, when making a decision to switch to cloud computing, the client first of all takes into account:

- *issues of security and safety of data that are processed and stored outside the direct control of the enterprise (information about customers, personal data of employees, etc.).*
- *legal, regulatory compliance requirements, such as laws on personal data protection, which require that the data remain within a certain jurisdiction.*

In addition to the above main elements of the technological landscape of the digital economy, the report considers the following:

- ✓ *synthetic media,*
- ✓ *internet of things (IoT),*
- ✓ *digital 5G,*
- ✓ *digital worlds ("metaverse") which creates a completely virtual environment),*
- ✓ *Web 3.0,*
- ✓ *quantum computing.*

Due to the accelerated digitalization of economic processes, the auditor may face its potential impact on behavior and compliance with the requirements of the Code of Ethics. In this regard, the auditor may face the following impact of digitalization on the implementation of the principles laid down in the Code of Ethics, as well as the potential impact on the auditor's behavior will be as follows:

- the auditor should have in-depth knowledge in the field of digital technologies, which should be related to:

- *first of all, with an understanding of the operation of information systems and devices,*
- *competencies in the field of financial assets, products and instruments that are traded through electronic systems,*
- *knowledge in the field of accounting, regulations and legislation in the field of digital products.*

In this regard, the question arises about the level of sufficiency of the auditor's competence in these areas. In this regard, the Code of Ethics should prescribe the definition of sufficient confidence competence as sufficient knowledge of how the system works in order to: have confidence in what is happening with the system or tool; and be able to justify the use and results of the system (tool).

- potential impact on the independence of the auditor, for example: in cases when, when buying crypto assets from a potential client to audit financial statements, etc. These points should be spelled out in the Code of Ethics.

- the need to gain knowledge in the field of digitalization and from technologies that should consist of knowledge gained at the university level and post-university (when taking courses). Taking courses in the field of technologies that will give knowledge in the field of: basic computing, database analysis, blockchain and others.

Auditors must comply with the International Standards of Independence contained in the Code of Ethics when using IT technologies. This requires knowledge, understanding and application of all relevant provisions:

- *elimination of circumstances that threaten the independence of the auditor or audit firm (new business lines and relationships are made possible by technologies that may threaten the independence of personal interests or business);*

- *the use of retaliatory precautions (for example, the use of professionals who are not members of the audit team).*

### **Conclusion**

Considering issues related to the implementation of the Code of Ethics by auditors and audit firms, it should be noted that the IESBA has already begun preparations for the revision of the Code of Ethics in the context of digitalization. Analyzing the normative documents presented by the IESBA, as well as the practice of conducting an audit, the authors propose to consider this issue at the following levels:

- ✓ *international normative acts, namely the Code of Ethics,*
- ✓ *regulatory documents of the audit firm,*
- ✓ *human resources, namely the level of competencies that an auditor should have in the digital economy.*

At the level of international regulations, the authors propose to supplement the Code of Ethics with situations where the independence of an auditor or an audit firm may be violated, for example, when acquiring crypto assets from a potential client or client.

At the level of regulatory documents of an audit firm, its policies and procedures for quality management should indicate the requirements for candidates for the position of an auditor with the required level of knowledge in the field of digital technologies.

In terms of auditors' level of knowledge in IT technologies, IESBA proposes five key areas for advanced training in technologies that are essential in the digital economy (IESBA Technology working group phase 2 report, n.d.):

- ❖ *data-related skills and concepts (data visualization, dataset auditing, data completeness),*
- ❖ *technological capabilities (effectiveness of the control environment, risks, including those associated with fraud in IT),*
- ❖ *cyber security: (cyber attacks, regulations in this area, etc.),*
- ❖ *IT fundamentals (understanding source code, basic level of programming,*
- ❖ *artificial intelligence*

It should be noted that university programs in accounting and auditing should be revised in accordance with the new requirements imposed by the rapid development of the digital economy.

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