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GLOBAL CHALLENGES FOR ACCOUNTING AND AUDITING IN THE 3rd DECADE OF THE 21st CENTURY

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Summary: The purpose of this article is to present the global challenges which already face accounting and auditing and which will accompany them during this decade. They are mainly related to technological development, global changes in the world economy and geopolitical developments. Professional community should consider those challenges, get prepared to properly overcome the difiiculties and act in favor of the organizations and institutions they present, simultaneously developing and improving the approaches to their professional directions. The study of those challenges can also provide valuable information to those people, who hire, cooperate with or rely on accountants and auditors.

Keywords: Accounting, auditing, artificial intelligence, cyber security, blockchain, cryptocurrency

JEL Classification: M41 Accounting, M42 Auditing

Introduction: The 21st century, which can also be called a technological century, is experiencing a rather dynamic development. That dynamic certainly has its impact on various professions, and auditing (internal and external), as well as accounting are not an exception in this context. Since the beginning of this decade those developments have intensified due to new realities, geopolitical processes and global changes. Various professions have undergone and will still undergo transformations, as new processes bring new challenges. The latter include artificial intelligence and automation, cyber security, cryptocurrencies and blockchains, diversification of skills and knowledge.

From time to time the world goes through such global changes and crises, that almost all kinds of activities and life in general have to undergo huge changes to resist new imperatives. A striking example is the recent corona-crisis, which dictated its own rules to almost the whole world. As the world economies are now more interconnected than ever, various processes spread quite quickly through the world with the effect of a chain reaction. Due to such transformations accounting and auditing periodically face such problems when it is necessary to change the approach to the profession, make changes in professional practice standards, as well as in legislation. Determining clearly factors for new transfomations, their origin and the possible consequences of their influence, regular discussions about them, exchange of ideas and experiences are vital for accountants and auditors, since the global challenges sometimes move faster than professionals make amendments in standards, frameworks and guides.

Further we will discuss separately the main challenges mentioned above and their impacts on accounting and auditing.

Artificial intelligence and automation: There are several definitions for the term artificial intelligence (AI), but the core meaning is almost the same: it's a complex of technologies designed to replace various human activities and abilities with different goals. One of the definitions states: AI is a human-like intelligence, exhibited by a computer, robot, or other machine. It refers to the ability of a computer or machine to mimic the capabilities of the human mind (learning from examples and experience, recognizing objects, understanding and responding to language, making decisions, solving problems) and combining these and other capabilities to perform functions a human might perform, such as greeting a hotel guest or driving a car. [1] Undoubtedly, AI and automation of some kinds of activities help people avoid various human errors, save time and other resources and use them in the most valuable processes. It also allows organizations to significantly reduce their costs where it's possible. Concerning accounting and auditing, IA might come in handy to use historical

data, analyze huge information, make logical conclusions. Nevertheless, IA brings new challenges for accountants and auditors. First of all, the information provided by IA cannot be always trusted as it is not 100 percent insured against failures. Besides, it requires certain knowledge and skills for effective usage, and as the technologies develop and change very quickly, especially in recent years, accountants and auditors need to keep the finger on the pulse all the time, in addition employers need to periodically and properly invest in staff training. Another issue is related to the designing of the processes. Accountants and auditors use certain systems, methods and technologies during their routine work. The application of IA and dynamic changes in it require transformations in processes used by accountants and auditors, which means spending extra time and resources on designing new systems and approaches to work adapted to the conditions dictated by IA. The task here for the professionals is to seek to always find the golden mean for effective cooperation between human capital and artificial intelligence with minimum losses and use of resources.

As we have already mentioned, automation has its benefits for organizations and diferrent professionals in general, including accountants and auditors. At the same time it can cause some problems for them. Automation leads to expulsion of some employees or at least several functions they do. The tendency of replacing various jobs by automated systems can already be seen. Meanwhile, according to a Mckinsey Global Institute report, between 400 million to 800 million jobs worldwide will be lost due to automation by 2030. Oxford Economics expects robots and automation to replace 20 million (8.5%) global manufacturing jobs by 2030. [2] Another study by PwC predicts while automating and replacing some of the jobs by the end of this decade, the technology will create millions of new jobs both directly and indirectly. According to the study, AI will create as many as 7.2 million jobs between 2017 and 2037 while displacing 7 million jobs during the same period, leading to a net growth of 200,000 jobs. [3] World Economic Forum report (2018) states automation will displace 75 million jobs but generate 133 million new ones worldwide by 2022. Gartner predicted AI-related job creation will reach 2 million net new jobs in 2025. [4] There are also various researches and predictions that present the list of professions which can or cannot be replaces by IA. Among the possible replaced professions is bookkeeping clerk. It's clear that IA will mostly replace jobs and activities which include repetitive and manual tasks. Accounting and auditing have such parts in their functions. Big companies usually have big accounting and auditing teams, where the duties are segregated among several employees. In developing countries, where the technologies are not as developed as in leading countries, accounting and auditing departments still have members in their staff, who mostly do repetitive and manual functions, which can be replaced by new technologies. So such systems will soon face the need for cutting their staff. Accountants and auditors worldwide need to update their knowledge and skills if they want to save their jobs.

Another issue concerns the auditing of AI. First of all there is a need for IT auditors in audit departments and this need will increase with the progress of new technologies. As it is known, nowadays, in this technological century, the IT companies are more attractive and seem to be more perspective and profitable in the future, so it is a big question, which sphere will IT professionals choose - auditing or IT companies. If auditing companies fail in creating attractive conditions (including financial factors) for IT professionals, they will lack relevant specialists. Besides, there aren't still enough institutions and programs which prepare IT auditors. It is worth mentioning that those specialists need also serious professional expertise which is impossible to just gain by special courses or books. According to our own practice in Armenia, where the auditing market is quite modest due to the country's capabilities, it can be stated that there is a lack of IT auditors, since the serious specialists can be counted on the fingers. The lack will be more obvious in the upcoming years, when IA penetrates more and more areas of activities. The small number of IT auditors in Armenia is due to the lack of training opportunities, professional practice, attractive conditions at job market, as well as employers' cognition level of the need for IT auditors (especially for internal audit departments).

According to the discussion of issues mentioned above, it can be stated, that IA brings both new opportunities and challenges for accounting and auditing, the professionals and relevant institutions need always follow current tendencies and match properly their activities with them in order to gain more and lose less.

Cyber security: Nowadays, in technological times, cyber security plays a great role in organizations' life. The increase of leading technologies' use brings new challenges concerning cyber security. Each organization possesses some kind of confidential information, the disclosure or loss of which can seriously damage their activity. This also concerns such professions, as accounting and auditing, which usually deal with information of the highest level confidentiality. In this context, the recent realities, related to corona-crisis, have created new challenges for various professions, including accounting and auditing. Many organizations throughout the world have had to practice remote working. Despite this practice has several advantages related to safety, comfort and time saving, it also causes some inconvenience. Many organizations were not fully ready to respond immediately to the imperatives of remote working. Some accountants and auditors have had troubles with the use of information available only in the territory of the organizations. As various organizations didn't have or moreover still don't have proper cyber security systems and policies, they haven't risked providing accountants and especially auditors with the complete information necessary for full-fledged and effective work.

Another issue is related to the use of new technologies, including cloud platforms in the routine work. There's always a risk for losing vital data practicing such platforms. Besides, the hacking number is increasing year by year and the tricks are improving. Accountants and auditors should get prepared to defend against hacking, phishing and other cyber attacks to protect the sensitive data they use or possess. IT auditors and support specialists will come in handy here.

Cryptocurrencies and blockchains: One of the dynamic processes that probably will make serious changes in accounting and auditing practice during this, as well as the following decades throughout the worlds, is the development and usage increase of blockchains and cryptocurrencies.

Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. Virtually anything of value can be tracked and traded on a blockchain network, reducing risks and cutting costs for all involved. [5] It's clear from the term definition that blockchains are designed to provide the information faster, safer and more accurate. However, blockchain is a serious challenge for accounting and auditing. First of all, it's quite a new technology, which still needs to be explored and is rapidly developing.

According to several predictions for 2030, blockchain will be leveraged for a majority of the world trade, will have a positive impact on digital businesses and will also increase the value in stock markets, every individual and their virtual or physical assets will have blockchain identities, will considerably improve the global standard of living by reducing corruption, will promote financial inclusiveness and tokenization (it refers to providing the ownership of real assets by using digital tokens (in the blockchain ecosystem, any asset that is digitally transferable between two people is called a token) [6]) of value-generating assets. [7] As we see, the future of blockchain industry is quite promising.

It's clear that in case of blockchain application, it will include all kind of accounting entries. In general accounting will get a modified nature. It will become more digital that ever. It will be required for accountants to have certain knowledge and skills to be able to work with this new system. They should be more flexible to respond quickly the dynamic developments of blockchains. At the same time they will lack experience during the upcoming years. Moreover, the failures in this system can just paralyze their work.

The challenges are almost the same for auditors. In addition, auditors need special regulations and professional practice guides for auditing properly such technologies. For external auditors, it is assumed that their functions will undergo some transformations, since the assumed accuracy and

fairness of transactions and consequently financial statements will draw their attention more on internal controls.

In turn, internal auditors will play a significant role in blockchain development. Their function will need to evolve to encompass the ability to validate that the individual components of a blockchain are functioning correctly. This process includes validating access permission, encryption, and cryptographic code, as well as reviewing the validation of smart contract transaction codes, functionality, and security. The relevant governance, risk management, and control procedures also will require internal audit consideration. [8] Dealing with blockchains, internal auditors will also face some challenges, including awareness, proper expertise and cyber security. They will need to broden the horizons of their knowledge and skills as they will have to work in a quite new and dynamicly developing system.

Another challenge is related to cryptocurrencies. Cryptocurrencies are new kind of assets, which are developing rapidly and try to capture more and more markets.

In general cryptographic assets are transferable digital representations that are designed in a way that prohibits their copying or duplication. Cryptographic assets are used for a variety of purposes, including as a means of exchange, as a medium to provide access to blockchain-based goods or services, and as a way to raise funding for an entity developing activities in this area. One of the most commonly known subsets of cryptographic assets are cryptocurrencies, which are mainly used as a means of exchange and share some characteristics with traditional currencies. Currently two of the most prominent cryptocurrencies are Bitcoin an Ether. [9] Taking into account the development tendencies, it can be said that they will be a real challenge for auditors and accountants. First of all it is worth menthioning that there is still no accounting standard for them. While cryptocurrency serves as a means of payment, it cannot be considered as a cash since it is a form of digital money. It cannot be also classified as a cash equivalent, because it is a subject to significant price volatility. Cryptocurrency should not be accounted for as a financial asset, since it does not seem to meet the definition of a financial instrument either because it does not represent cash, an equity interest in an entity, or a contract establishing a right or obligation to deliver or receive cash or another financial instrument. Cryptocurrency is not a debt security, nor an equity security, because it does not represent an ownership interest in an entity. It can be said that cryptocurrencies can be more or less classified as intangible assets. [10] So it’s clear that accountants might have some troubles dealing with cryptocurrencies, as there is no accounting standard for that. Besides, in many countries there is a lack of legal regulations for cryptocurrencies. Auditors, both external and internal will lack experience and expertise auditing cryptocurrencies in the upcoming years. There will also be certain issues with AML policies.

Diversification of skills and knowledge: As we have already mentioned above, new technologies are developing rapidly, thus bringing new challenges for accounting and auditing. It's obvious that specialists in these spheres will have to expand the scope of their knowledge and skills and periodically update them. First of all they should gain technology-friendly skills and diversify their knowledge. Since new technologies will sooner replace some of accountants and auditors repititive and manual functions, they need to enrich those skills, that cannot be replaced by AI, if they want to remain demanded specialists. Among such skills are crytical and analytical thinking, emotional intelligence, advisory, leadership and interpersonal communication skills, flexibility, data analytics. Besides, these specialists will need to expand their knowledge of business processes understanding. So accountants and auditors have much to do to survive the current and upcoming technological transformations and they need to stay in rhythm with this dynamic all the time.

Conclusions:

Summarizing the article, it can be concluded that technological developments will really bring new challenges for accounting and auditing in this decade. These professions need to undergo certain transformations to be able to respond the imperatives of global changes on time. Specialists will have

to enrich their skills and knowledge, constantly self-educate, to take part in professional training programs, develop their analytical and crytical thinking, to try to understand business and new processes better and deeper. Meanwhile, professional institutions should properly and on time make amandments in standards and provide special guides to avoid failures in practice, as accounting and auditing play a vital role in organizations' life and development. The challenges and issues related to them mentioned in the article may also help employers, directorates, boards and talent managers to improve their approaches to accounting and auditing professions and to invest properly in staff training in order to get desirable results for their organizations.

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