
ACCOUNTING AND AUDITING IN THE CONTEXT OF NEW TECHNOLOGY APPLICATION AND INTERNATIONAL INTEGRATION: OPPORTUNITIES, CHALLENGES AND ISSUES

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The Fourth Industrial Revolution has been creating breakthrough changes, having a strong impact on socio-economic development in each country and globally, directly affecting most fields and professions. The accounting and auditing sector is not only directly affected by each unit, but also related to all accounting and auditing activities of other subjects. Accordingly, accounting and auditing workers are facing great competitive pressure along with the requirement to improve professional capacity and increase the application of science and technology. The article focuses on studying the main aspects of the international integration process and the application of new technology in the field of accounting and auditing, which has brought about both great opportunities and many challenges in terms of career opportunities, demand for accounting and auditing human resources and has also raised many issues that need to be solved to develop the accounting and auditing sector in the new context, gradually affirming its position in the region and internationally.

Keywords: *Accounting and auditing profession; International integration; New technology; Artificial intelligence; Opportunities and challenges in the profession and in the demand for human resources in accounting and auditing.*

1. Problem statement

We are living in a world with many changes, in which the most important and obvious is the emergence of new technologies and artificial intelligence (AI) that have a profound and rapid impact on all areas of social life; along with that, political fluctuations and conflicts in the world have been and are creating new trends in cooperation and competition between countries and regions. Those fluctuations are affecting the lives, jobs and incomes of each individual and household. From there, there is a feeling of anxiety about whether one's job will be replaced by new technology, what will happen to one's current job position, whether income will be affected or not... that feeling is called "existential crisis".

However, the general trend is still integration for mutual development, new technology will create opportunities to reduce the burden on people, but also create many challenges that require change and adaptation. The explosion of AI is changing global professions and labor, in which accounting and auditing are not out of this general trend. This is both a warning and an opportunity for us to change

the content and training methods in universities and vocational training institutions, helping learners have a solid knowledge foundation, a new vision, new thinking to improve skills, adaptability to survive and develop their careers.

2. Research overview

In recent times, we have heard and read in the press, media channels and social networks about breakthroughs in science, technology and the rapid penetration of AI into human life. There have been a number of authors researching this issue, most notably Thanh, D. V. (2023) published an article "Vietnamese Accounting with Digital Transformation: Current Situation and Solutions" in the Accounting and Auditing Journal in 2023. The article outlined the impacts of digital transformation on the work and profession of accounting in Vietnam, the current situation and solutions needed to promote the advantages of digital transformation, avoiding fluctuations and changes that are "shocking" to the accounting profession. However, the article has not yet made the necessary forecasts and rapid changes in opportunities and challenges for the accounting and auditing profession in the context of the rapid

development of information technology, artificial intelligence and Vietnam's increasingly deep international integration.

In particular, in 2018, the Vietnam Association of Accountants and Auditors reported: "Survey assessing the impact of the 4.0 Industrial Revolution on the fields of accounting, auditing and finance". This report is an overall picture of the impact of the 4.0 Industrial Revolution on the fields of accounting, auditing and finance in Vietnam, but at that time, Vietnam had just begun to approach the 4.0 Industrial Revolution, many people and many professions still had a vague awareness of this Revolution, had not seen its changes and "Revolutionary" nature, so this report had not had a great impact on economic and social life, even in the profession and those working in accounting and auditing in Vietnam.

In recent years, some general statistical reports show that, in the world, millions of jobs in the accounting and auditing professions have been replaced by technology and AI, as predicted by the Institute for the Future (ITF) in the United States, estimating that 85% of current traditional jobs will only exist until 2030. That is shocking to many people, they worry about the future, they may lose their jobs, reduce their income and their lives and their families will be difficult. Besides, optimists believe that the progress of science and new technology will reduce the burden on people, help increase productivity and work efficiency, create more wealth and convenient services to help people. If we calmly observe, accept and adapt, we will see both the challenges and opportunities for each person, each profession and each country to integrate and develop with the world.

3. Accounting and auditing in the context of applying new technology and international integration

Monitoring the socio-economic development in both Vietnam and other countries in the world in recent times shows that no job is stable forever, no job position is not subject to change over time and the same goes for the accounting and auditing profession. No one can deny that new technology in general and AI in particular are gradually replacing humans in the same repetitive manual work. For example, in traditional accounting work, operations such as creating documents, controlling documents, recording (or entering into the computer) data from documents into detailed accounting books to create debit - credit entries, calculating quantities and values, calculating salaries, summarizing data to create ledgers, closing books, creating general accounting

reports according to predetermined templates, creating financial reports according to prescribed templates and standards, etc. are often very boring and repetitive for accountants. Accounting software or accounting modules in business management software (such as ERP, SAP) and AI today have been programmed to replace accountants with those boring tasks. Accounting and e-commerce have also combined, the development of electronic data interchange (EDI) and electronic funds transfer (EFT) is the beginning of the exchange of digitally applied accounting information between trading partners. Connecting and processing transactions with suppliers, customers, tax authorities, banks, etc. and within the enterprise are also done automatically through the financial electronic data exchange (FEDI) on the Internet and local network platforms. AI technology can even analyze historical data, current financial data, calculate assumptions based on Big Data to help business owners make decisions, make future forecasts to guide business operations. In the process of processing transactions and continuously updating data to the accounting system, people have installed automatic checkpoints to detect errors and violations to issue warnings instead of manual internal control work; at the same time, the system will save evidence traces to serve future audit work. In auditing activities, software technology and AI technology are also creating many automatic tools that strongly support auditing work. Applying technology in auditing can help:

- Automate previously manual processes;
- Emerge the exploitation and use of new evidence;
- Expand the scope of testing in auditing;
- Increase timeliness through the use of technology;
- Improve the quality of audit evidence.

It can be said that the development of software technology and AI application in the economy in general and in the field of accounting and auditing in particular are strongly affecting the accounting and auditing profession; making the accounting and auditing profession fundamentally and comprehensively change from professional activities to practical methods... With the support of technology, accounting work and operations are deployed more quickly and effectively, but help optimize resources, save time and costs for businesses.

Accounting and auditing are inherently international professions, because although professional standards vary from country to country, those national standards still revolve around the

axis of internationally recognized standards. The practice of accounting and auditing, regardless of where it is, is still similar to the general practice methods. Accounting and auditing software, often created by software developers, is increasingly converging on a unified platform and template to provide to businesses around the world. Although there are some specific applications that can be open for each business to customize according to its wishes, the basic platforms are still unified for all types of businesses and in all countries. From there, accountants and auditors in one country can easily move to work in another country without much confusion due to differences.

In the new technology environment and increasingly deep international integration, accounting and auditing work will not be limited by space, geographical distance, implementation methods, or traditional manual procedures. Thanks to new technology, accounting and auditing can collect, process, store information and transmit data quickly; connect in real time between detailed accounting and general accounting, between accounting components; between accounting and functional departments, with management levels and with outside the enterprise. Thanks to the application of technology in accounting and business administration in the digital technology environment, it also creates connections between client enterprises and auditors, between auditors and auditors and auditing organizations. The application of computer networks, the Internet and other information transmission protocols, along with the collection and analysis of information on an automated platform, artificial intelligence, helps the process of calculating, monitoring each other and preparing accounting reports, preparing audit reports become faster and simpler; accountants and auditors can focus on performing higher responsibilities than traditional work. The application of AI, Big Data, cloud computing, the Internet, etc. helps accountants and auditors to perform complex tasks without spending too much time, human resources and costs.

(i) Opportunities for accounting and auditing in the context of applying new technology and international integration

It can be said that the progress of applying new technology in the field of accounting and auditing is bringing great opportunities to the profession:

- Expanding the job market for accountants and auditors due to access to the international market. Thanks to the Internet, networks, cloud computing

and the application of accounting and auditing software, the geographical distance and professional practice distance between countries have been eliminated. Accountants and auditors in Vietnam can work for businesses in the United States or European countries, or vice versa. This means that accountants and auditors can do their work anywhere, they can still process operations, collect data, analyze and log information into the system, prepare accounting and auditing reports and provide information to their businesses, as long as they have the authority to connect to the system of that business without having to be present at the business.

- Enhance the consistency in professional practice and compliance with generally accepted accounting and auditing principles and standards. Thanks to the development of digital technology, software developers will integrate unified business practices based on compliance with commonly accepted principles and standards. In addition to the built-in common methods and standards, software developers also allow for the implementation of customized methods and standards for each country, each industry and each enterprise. From there, the process of practicing accounting and auditing between countries, industries and enterprises is becoming more and more unified, helping individuals and enterprises providing accounting and auditing services in different countries to get closer in their profession.

- The execution time for each accounting and auditing process will be faster, including: processing business, entering transaction data into the system, creating reports, thereby giving them more time for higher-level, deeper analysis.

- Accounting and financial services and information are always available, accessible 24/7, making it easier for people inside and outside the business to access.

- Reduce the rate of professional errors because they are processed automatically without manual operations, human errors are reduced.

- Reduce the number of employees doing accounting and auditing work simply in the traditional way and improve the productivity of accountants and auditors.

- Help businesses manage cash funds and cash flow better, improve the efficiency of payment and debt collection.

- Save costs for sending mail, paper costs and paper storage costs that traditional accounting and

auditing methods often have to bear.

- Improve the evidence trail for auditing, increase the security of accounting and auditing information and documents.

(ii) Challenges for accounting and auditing in the context of applying new technology and international integration

Along with the opportunities, accounting and auditing in the context of applying new technology and international integration are also posing many challenges, namely:

- Due to different levels of development, political institutions and laws between different countries, not all countries accept and apply international accounting and auditing standards. Therefore, the use of methods and tools integrated on software platforms, the practice of accounting and auditing between countries still has many differences.

- In order for accounting and auditing to develop in line with the era of applying new technology, it requires each enterprise as well as related parties and state management agencies to have synchronous changes in applying new technology, perfecting the legal basis, and changing management methods to suit the new context. This requires a lot of time, effort and cost for each subject and the entire economy, which not every country or business can meet in a short time.

- To have human resources to do accounting and auditing well in an environment applying new technology, it requires time and costs to train new and retrain accountants and auditors. The training system has not kept up with the rapid development of science and technology, especially in countries with underdeveloped education and training systems, which requires more time. For those who have been doing accounting and auditing in the traditional way for a long time, each business will have to face resistance from users, so it is necessary to persevere in persuading and training them to adapt to the accounting and auditing system applying new technology.

- To be able to deploy an accounting system and conduct audits suitable for the new technological environment, each enterprise must invest in hardware and software, network connection costs, and initial consulting costs will be quite expensive.

- To convert the traditional accounting system and auditing process to an accounting system and auditing that applies new technology, enterprises must also incur costs related to changes in business

process systems, information processing and creating appropriate accounting and auditing report templates. In addition, enterprises must also incur costs for continuous training and retraining for all their employees, equipping employees with new professional skills.

- Enterprises must also bear the costs arising from security issues in the new environment, changes to meet the security requirements for economic and financial transactions in the initial period. If the initial configuration of accounting systems and auditing processes is not properly built and set up, or if the integration with legacy software fails, there will be periodic adjustment costs that will result in less benefit.

The costs and benefits of deciding on a new application in accounting and auditing are closely related to the accounting and auditing processes that are targeted, the technology used, and the knowledge needs of the proposed solution, so each decision is unique and there is no standard template for such decisions. For example, factors such as the volume of documents per period, the percentage of documents in digital form, the time per cycle, the rate of errors and current transaction costs, security and control issues, accounting and auditing software or legacy systems, etc. must all be considered when implementing a new technology application.

- For those who build laws and standards in the field of accounting and auditing, they are also making efforts to research, supplement, amend and renew regulations and standards. The goal of this process is to protect accountants and auditors in the context of applying new technology, always creating consistency in the working process between accountants and auditors; at the same time, it is to create a measure of work quality and demonstrate to stakeholders that accountants and auditors work professionally, for the benefit of stakeholders and the benefit of the community.

(iii) Requirements for accountants and auditors in the context of new technology and international integration

We should not confuse accounting and auditing in the context of applying new technology with accounting and auditing applying information technology. Because accounting and auditing applying information technology is just a shift from manual accounting and auditing to computer-based accounting and auditing. To clearly see the requirements for accountants and auditors in the current context, let's compare the differences

between accounting and auditing in the period of applying information technology with the current context of applying new technology and international integration:

- Traditional accounting and auditing focus on serving managers; accounting and auditing today are user-centered, supporting users, customers and partners.

- In the period of applying information technology, people often focus on investing in information technology systems for accounting and auditing; But accounting and auditing today focus on creating benefits and values.

- In the period of information technology application, people focus on software specifically for accounting and auditing work at a specific unit; accounting and auditing today have shifted from using individual software to using a common, large-scale technology platform and creating a common working environment, not just for a single business.

- Information technology often only creates tools to automate accounting and auditing processes, so work is often separated from one department to another, from one computer to another. Meanwhile, accounting and auditing today are changing the way they work, shifting from doing each part of accounting and auditing each department to a comprehensive working process, all work is carried out in a single technological environment.

- The shift from accounting and auditing on individual computers to performing on the entire enterprise's computer system is still just a change in the process of applying information technology. Today, accountants and auditors use cloud computing to store and share information and data on a larger scale, enhancing the connectivity between related entities.

- In the environment of applying information technology, businesses often have to invest heavily in hardware and software to build and maintain their own technology systems. Today, businesses use the method of renting or purchasing services, creating flexibility, increasing or decreasing according to the needs of the business, helping to optimize resources.

- In pure information technology applications, businesses focus on building separate systems and need a team of technology experts. With new technology today, people focus on end users and the community, with community technology teams to guide and support users of new technology platforms.

- In accounting and auditing, applying information

technology often emphasizes the “how to do” of the work, so it is necessary to have a deep understanding of the technology; when applying new technology, accountants and auditors need to focus on the goal of “what needs to change”, business leaders will decide what needs to change and assign the implementation to each person, each professional group.

- In the past, the important job in applying information technology was to find people who wrote software. On the contrary, applying new technology today shifts the focus to people who are good at using it, especially the ability to use technology products created by software suppliers. Users contribute to the creation of smart software products and need to understand how to use that software product.

- In the accounting system, auditing applying information technology focuses mainly on building technical systems; today, people are interested in the technological environment, not only as a technical infrastructure, but also as a new working space.

- In the application of traditional information technology, accounting and auditing often focus on replacing manual labor with automated processes; accounting and auditing applying technology today aim to support people, helping them make smart decisions based on data.

- In accounting and auditing applying information technology focuses on processing data from within the enterprise, of each customer; accountants and auditors today focus on collecting and processing daily user data to optimize work and personalize activities.

- Accounting and auditing applying information technology in the past focused on automating structured data and historical data; Accounting and auditing applying technology today also focus on collecting and processing unstructured data, analyzing new data to create new knowledge and new audit evidence.

- Accounting and auditing systems based on information technology focus mainly on information technology itself; while accounting and auditing applying new technology expand the use of information technology and many new technologies such as cloud computing, Internet, networks, AI, Big Data, Blockchain... are technologies that help accounting and auditing work to be performed in real time, quickly, anytime, anywhere, more securely, more flexibly and accounting and auditing reports provide more valuable multi-dimensional information.

4. Issues raised

In order to take advantage of opportunities and resolve challenges for the accounting and auditing industry in the context of applying new technology and international integration, according to the author, it is necessary to pay attention to solving the following issues:

The emergence of new technologies (including AI) will increase the demand for a series of new jobs. There will be many new industries emerging, aiming at sustainable development, protecting the environment, improving health and reducing the burden on people. We are on the way to reaping the great values that science and technology bring. It is important that we remember this, because many of us have a bleak view of the future, fearing negative impacts on our career development. We should expand our imagination about what will happen and what can happen in the future. Each of us can change ourselves, from our thinking, thinking and acting, as well as our goals to realize a bright and happy future. The emergence of AI has changed a lot in our lifestyle and work, it is also powerful enough to change human perception. In the process of change, each of us will be a part of it and each person will decide the content of that change.

More than thirty years ago, who could have imagined what the Internet would be like? Since the birth of print newspapers, there has not been an information revolution like the Internet. At the time the Internet was first born, many people thought that traditional newspapers (print, radio, television) would become obsolete, university lecture halls would be influenced by lectures and audiobooks of famous professors and scientists that could be easily shared with everyone. Up to now, all types of journalism have long taken advantage of the Internet platform to develop and still carry their own values, university lecture halls still welcome many students and the teaching and learning process at universities is taking advantage of the great advantages that the Internet brings to change and improve the quality of training. Taking advantage of the values that the Internet brings more or less depends entirely on the journalists and each university. In the context of rapid development of science and technology and international integration today, although there are more complexities, diversity and multi-dimensionality, the trend is still to help people work more easily and have a better life. The important issue is that each of us must clearly perceive and must change to adapt to the new context. Most professions (including accounting and auditing) must also change

to continue to develop and bring value in the new context. The ideology, adaptability and change of each organization and each person will affect the future of the organization and each person. The accounting and auditing profession is also in the general context and trend, software technologies used for accounting and auditing have been integrated by software developers with most of the standards, integrating AI technology. In addition, the software also provides optional modules to facilitate each country, each industry and each enterprise to include their own national standards, management requirements by industry and each enterprise. The world's major accounting and auditing professional certification organizations have been evaluating candidates according to standards related to understanding of professional standards, the ability to practice and exploit new tools created by technology, the ability to change and adapt to new contexts. With these professional certificates, accountants and auditors can expand their scope of work around the world by moving their residence or still living in Vietnam, but working for businesses in other countries. Conversely, people in other countries can move to Vietnam or live in their country, but work for businesses in Vietnam. That creates both opportunities and challenges in terms of international competition in the accounting and auditing labor market. This trend and context also poses many opportunities and challenges for universities and vocational training institutions in accounting and auditing training. First of all, the training process must quickly change and adapt to the new context, take advantage of and exploit available technology platforms for use in training, equip learners with thinking and awareness of technology applied in the profession. In addition to equipping learners with the necessary basic theoretical knowledge, it is necessary to create opportunities for learners to experience reality to initially approach professional practice. In particular, the training program for accounting and auditing must closely follow the assessment content of prestigious accounting and auditing professional organizations in the world (such as ICEAW, ACCA, CPA Australia, ...). Through cooperation to utilize resources, share knowledge and experience with each other, integrate assessment content according to these certificates into the training process, to help learners easily receive these important professional certificates. Cooperating with these organizations will be the most favorable way to help improve the quality of the school's training process, demonstrated through the criteria of the rate of learners after graduation who have a suitable job position in the right profession.

5. Conclusion

In the context of international integration and the development of new science and technology, especially AI technology today, almost all professions (including accounting and auditing) are being affected and changing rapidly. That change is requiring change from all stakeholders, from state management agencies, universities, professional organizations, businesses and individuals. Although technology can replace many jobs, it cannot completely replace humans, especially jobs that require thinking. For example, in accounting and auditing, caution, guesswork, qualitative thinking, reasoning, professional skepticism, human-to-human connection... are issues that require thinking, thinking with human emotions and feelings, which machines and technology cannot replace. The problem is that we need to change our mindset, our way of thinking and our way of doing things to adapt to the new environment and context. Only those who do not want to change will be eliminated from the cycle of progress, while those who are willing to change will adapt and continue to develop. With an optimistic and positive outlook, we will see all our jobs and career prospects in the future. Many current jobs may no longer be necessary because technology has replaced them with algorithms, sensors and artificial intelligence; but the fields of accounting and auditing will be expanded with new leaps. Let's be ready to welcome that change and adapt to take advantage of new opportunities and great values that new technology brings; at the same time, we will contribute our important values to enhance our values that new opportunities bring.

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KẾ TOÁN VÀ KIỂM TOÁN TRONG BỐI CẢNH ỨNG DỤNG CÔNG NGHỆ MỚI VÀ HỘI NHẬP QUỐC TẾ: CƠ HỘI, THÁCH THỨC VÀ NHỮNG VẤN ĐỀ ĐẶT RA

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Tóm tắt:

Cuộc Cách mạng công nghiệp lần thứ tư đã và đang tạo ra những thay đổi đột phá, có tác động mạnh mẽ đến sự phát triển kinh tế - xã hội ở mỗi quốc gia và toàn cầu, ảnh hưởng trực tiếp đến hầu hết các lĩnh vực, ngành nghề. Lĩnh vực kế toán, kiểm toán chịu tác động không chỉ trực tiếp đến từng đơn vị, mà còn liên quan đến tất cả hoạt động kế toán, kiểm toán các đối tượng khác. Theo đó, lao động kế toán, kiểm toán đứng trước áp lực cạnh tranh rất lớn cùng với yêu cầu phải nâng cao năng lực chuyên môn, tăng cường ứng dụng khoa học, công nghệ. Bài viết tập trung nghiên cứu những khía cạnh chính của quá trình hội nhập quốc tế và ứng dụng công nghệ mới trong lĩnh vực kế toán, kiểm toán đã đem lại cả những cơ hội to lớn, đồng thời cũng gặp phải không ít thách thức về cơ hội nghề nghiệp, nhu cầu nhân lực kế toán, kiểm toán và cũng đã đặt ra nhiều vấn đề cần giải quyết để phát triển ngành kế toán, kiểm toán trong bối cảnh mới, từng bước khẳng định vị trí trong khu vực và quốc tế.

***Từ khóa:** Nghề nghiệp kế toán, kiểm toán; Hội nhập quốc tế; Công nghệ mới; Trí tuệ nhân tạo; Cơ hội, thách thức về nghề nghiệp và về nhu cầu nhân lực kế toán, kiểm toán.*