

Obstacles to the Application of Artificial Intelligence Technologies in the Practice of the Accounting Profession in Algeria

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Abstract

This study aims to diagnose the main obstacles that hinder the adoption of artificial intelligence applications in accounting practice within the Algerian business environment. To achieve this objective, the descriptive-analytical approach was adopted to provide an overview of the most important aspects of artificial intelligence technology, including its concepts, as well as to identify the regulatory framework governing the accounting profession in Algeria, while highlighting the main obstacles facing digital transformation in the Algerian accounting environment. The findings indicate that the use of artificial intelligence technologies in the accounting profession contributes to improving accountants' performance and enhancing the efficiency of accounting work. However, their adoption in Algeria faces several obstacles, most notably weak digital infrastructure, a shortage of specialized skills, high costs, and a limited legal framework. Overcoming these obstacles requires investment in training, the development of legislation, and the strengthening of digital transformation at the level of institutions and professional bodies.

Keywords: Artificial Intelligence; Accounting Profession; Accounting Practice; Algeria.

1. Introduction

Data-driven decision-making has never been more important. With the enormous quantities of data generated every day, accountants increasingly need to analyze larger volumes of data and provide insights rapidly and efficiently. Artificial intelligence is not limited to enhancing efficiency through the automation of routine tasks; it can also serve as a powerful partner in providing strategic guidance through its predictive analytical capabilities, thereby enabling more personalized services.

Artificial intelligence technology is emerging as an active force that is reshaping traditional practices and creating new opportunities for companies and clients alike. Accounting experts and specialists in financial and accounting affairs expect artificial intelligence to bring about a major transformation in accounting, as it has in other fields and in countries around the world, including Algeria.

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1.1. Research Problem:

The international accounting field is witnessing accelerated digital transformation owing to the opportunities offered by artificial intelligence technologies for developing the accounting profession. However, the pace of this transformation appears to be slow in Algeria. Accordingly, the research problem can be formulated through the following question:

What are the main reasons underlying the slow pace of digital transformation in accounting practice in Algeria?

Sub-questions:

To answer the research problem, it was divided into the following sub-questions:

- What is meant by artificial intelligence technology, and what are its main characteristics?
- How can the adoption of this digital technology contribute to improving the accounting work environment?
- What are the main obstacles facing the adoption of modern technology, represented by artificial intelligence, in accounting practice in Algeria?

1.2. Significance of the Study:

The significance of this study derives from the important role played by artificial intelligence technology in changing the nature of accounting activities and tasks and upgrading them from traditional practice to computerized practice. The study is also significant because it seeks to identify, in particular, the main obstacles preventing the activation of artificial intelligence technologies in the accounting profession within the Algerian business environment.

1.3. Objectives of the Study:

The main objective of this study is to diagnose the obstacles facing the digital transformation of the accounting profession in Algeria from a professional perspective, through:

- Identifying the main concepts related to artificial intelligence technology and the accounting profession.
- Providing a theoretical review of the legislative and regulatory framework governing the practice of the accounting profession in Algeria.
- Highlighting the impact of adopting artificial intelligence technologies on strengthening the accounting profession.
- Diagnosing the obstacles facing the digital transformation of the accounting profession in Algeria.

1.4. Research Methodology:

To achieve the objectives of the study and answer the research problem, the study adopts the descriptive-analytical approach, as it is considered appropriate for describing the impact of artificial intelligence use on the accounting profession and analyzing the obstacles that prevent the adoption of this digital technology by institutions and accounting firms in Algeria.

1.5. Previous Studies:

Several studies have addressed the positive impact of modern technologies, particularly artificial intelligence, on accounting practices. Among the most important are the following:

- Chenen Ali Abbas (2024), entitled “A Proposed Approach to Activating the Use of Artificial Intelligence Technology in the Accounting Field and Its Impact on Supporting and Developing the Accounting Profession.” The study aimed to develop a proposed approach to overcoming obstacles to activating artificial intelligence technology in the accounting profession in the contemporary Egyptian business environment. The researcher distributed 400 questionnaires to employees of joint-stock companies listed on the Egyptian Stock Exchange under the EGX30 index. The study concluded that several factors hinder the digitization of accounting activities in the Egyptian business environment, most notably the weakness of accountants’ academic and practical preparation for the artificial intelligence environment and the absence of accounting standards regulating the work environment.
- Najat Ben Terkiya (2024), entitled “Integrating Artificial Intelligence Technologies into Accounting and Their Impact on the Future of the Accounting Profession in Algeria: An Exploratory Study.” The study sought to present the theoretical framework of artificial intelligence and examine the impact of introducing its technologies into the accounting profession in Algeria by surveying a sample of accountants. Statistical analysis of the responses showed that the adoption of digital technologies in accounting practice plays an important role in improving procedures and reducing costs. Nevertheless, it represents a major challenge for professionals, particularly in its financial and security dimensions, especially because artificial intelligence makes changes in the traditional roles of accountants inevitable.
- Longinus Chukwudi Odoh, “Effect of Artificial Intelligence on the Performance of Accounting Operations among

Accounting Firms in South East Nigeria.” The study examined the effect of artificial intelligence on the performance of accounting operations in accounting firms in southeastern Nigeria through a questionnaire administered to 185 accountants and managers of accounting firms. The results showed that both expert systems and intelligent-agent technologies have significant effects on accounting functions, indicating a positive impact of artificial intelligence on improving accounting-task performance.

- Hasan El-Mousawi (2023), “Impact of Using Artificial Intelligence Applications on the Accounting and Auditing Profession – An Exploratory Study from the Perspective of LCPAs.” The study aimed to determine the impact of artificial intelligence applications on the accounting and auditing professions and the challenges they face from the perspective of Lebanese certified public accountants. A quantitative approach was adopted through a questionnaire distributed to 350 Lebanese certified public accountants. One of the main findings was that artificial intelligence improves the reliability of financial data and contributes to solving complex processes, although its use is accompanied by several challenges.

2. Artificial Intelligence and the Accounting Profession:

The need for smarter, faster, and more accurate financial processes is driving the adoption of artificial intelligence in accounting. Companies seek to streamline processes, while accountants look for ways to enhance their productivity. Artificial intelligence acts as a powerful partner by automating routine tasks, analyzing vast amounts of data, and providing valuable insights. It is not intended to replace human accountants, but rather to enable them to focus on what they do best: strategic thinking and solving complex problems. In the digital age, artificial intelligence helps accountants become more valuable.

2.1. Fundamentals of Artificial Intelligence:

Artificial intelligence is one of the most prominent and widespread features of digital technology in recent years. It is based on the principle of integration between humans and machines and has become widely used in fields such as medicine, engineering, education, finance, and business.

- Concept of Artificial Intelligence:

Artificial intelligence (AI) is based on the assumption that human thought can be mechanically reproduced through a process of computation. The study of this assumption has a long history. During the first millennium BC, Chinese, Indian, and Greek philosophers developed systematic methods of formal reasoning. Their ideas evolved over the centuries through philosophers such as Aristotle, who provided a formal analysis of syllogistic reasoning, and Euclid, whose Elements represented a model of formal reasoning. During the 1940s and 1950s, scholars from various fields—including mathematics, psychology, engineering, economics, and political science—began discussing the possibility of creating an artificial brain. Artificial intelligence emerged as an academic research field in 1956, and at the Dartmouth Conference in 1956, the American computer scientist John McCarthy introduced the term “artificial intelligence” for the first time. Researchers subsequently explored the potential of artificial intelligence throughout the United States (Pandey & Dongre, 2021, p. 226).

Before addressing the concept of artificial intelligence, intelligence may be defined as the set of mental abilities an individual uses to deal with new situations and to engage in organized thinking leading to inferential knowledge (Qasim, 2011, p. 11).

Artificial intelligence has been defined as “the study that makes computers do the things that people currently do, and do them better.” Mark Fox defined it as “the theory concerning how the mind works” (Al-Khafaf & Al-Otaibi, 2021, p. 166).

It is also defined as the ability of a machine to perform cognitive functions associated with human minds, such as perception, reasoning, learning, interaction with the environment, problem solving, and even creativity. In reality, artificial intelligence is a combination of computational technologies with varying degrees of maturity (Gheetha, 2021, p. 110).

From the foregoing, artificial intelligence can be understood as the study of how to make computers perform tasks better than humans and thereby develop systems capable of thinking and acting in ways comparable to human intelligence, with the objective of creating an intelligent machine capable of performing diverse tasks using its intelligence.

With rapid technological development, several concepts similar to artificial intelligence have emerged. It is therefore necessary to distinguish between them, as shown in the following table.

2.2. Concepts Similar to Artificial Intelligence

Robotics — represents the physical/embodied aspect or the machine itself, whereas artificial intelligence or the algorithm represents the “mind” of the machine.

Automation — an automated machine operates within the range of powers previously assigned by the programmer, whereas in artificial intelligence, action or behavior occurs through real-time interaction with the surrounding environment.

Machine Learning — a branch of artificial intelligence that focuses on developing models that learn from available data and use it to make decisions.

Smart Applications — smart applications generally rely on fixed programming and continuous improvements, whereas artificial intelligence is characterized by its ability to learn, adapt, and make decisions autonomously.

Data Analytics — uses data to extract patterns, trends, and knowledge, whereas artificial intelligence focuses on developing systems and technologies that learn from data and make decisions based on it.

Source: Prepared by the researchers.

2.3. Advantages of Artificial Intelligence and Its Technologies:

Artificial intelligence is a rapidly developing technology that has gained a prominent position across various sectors because of several advantages, including:

- Increased efficiency: AI automates data entry, verification, analysis, and other time-consuming manual tasks, reducing the need to review numerous paper documents and files. This saves valuable time and allows professionals to focus on complex tasks requiring human knowledge and judgment.
- Greater accuracy: AI's ability to process large volumes of data in real time reduces the likelihood of losing important information and increases the probability of identifying errors in reports. Accurate recalculations are particularly important because they directly affect audit results and decisions.
- Fraud-detection capability: AI helps detect fraud and money laundering by analyzing large datasets, conducting in-depth examinations, and identifying patterns of fraud and irregularities that humans may overlook, thereby strengthening fraud-detection efforts.

Artificial intelligence has become a dominant technology because it provides high-quality business solutions that can surpass human solutions when dealing with complex challenges. Important AI technologies and tools include (Merah, 2023, p. 69):

- Machine Learning: One of the current applications of artificial intelligence. It enables machines to access data and improve their performance by learning from that data and from feedback received in real time. It is used across industries to facilitate human work, handle big data, and perform analytical operations. Machine learning allows robots and smart devices to perform multiple tasks and interact with humans naturally and effectively.
- Natural Language Processing (NLP): A branch of artificial intelligence focused on processing language in a human-like manner. Technologies in this field have developed significantly and are now capable of writing journalistic articles, generating blog posts, and performing programming-related tasks such as creating video-game programs based on human instructions.
- Expert Systems: Computer programs that simulate human reasoning processes in different situations and work to solve problems. They store knowledge extracted from human experts and can therefore simulate specialists in particular fields, such as taxation or auditing.

Although these technologies differ in what they can provide to users, they share common elements: adaptability, meaning the ability to respond when changes occur in collected information; interactivity, which requires interaction between humans and computers to understand their needs; and iteration, whereby the system can request or process additional information to solve problems.

2.4. The Accounting Profession in Algeria:

The accounting environment in Algeria is flexible and evolving and responds to economic, technological, scientific, and local changes, as companies and accountants increasingly need more advanced methods for recording and analyzing their accounting operations.

2.5. Definition of the Accounting Profession and Requirements for Its Practice:

The Oxford English Dictionary defines a profession as an activity involving the application of specialized knowledge to particular subjects, fields, or sciences, especially those requiring prolonged training and formal qualifications in the course of professional practice (Buhai, 2016, p. 242).

Accounting is an ancient profession dating back thousands of years to Mesopotamia. It has evolved over the centuries in response to the social and economic needs of society. In 1494, Luca Pacioli revolutionized the profession through the application of an accounting system based on the double-entry principle. The accounting profession subsequently expanded considerably to meet changing needs. Accounting is an information system for measurement and reporting that covers both microeconomic and macroeconomic activities (Merah, 2023, p. 82).

The accounting profession also includes numerous important and demanding functions, such as preparing and adjusting various budgets, estimating the impact of future cash flows, assisting in risk management and the optimal allocation of resources, reviewing related logistical services, and ensuring continuous access to reliable and credible information about a company's position for use by stakeholders (Belaid & Ben Houas, 2024, p. 1040).

Based on the preceding definitions, accounting is a profession that aims to:

- Provide comprehensive and advanced accounting information.
- Strengthen investor confidence and financial stability.
- Improve the quality of companies' financial information and enhance transparency.
- Provide high-quality corporate financial reporting.
- Establish a strong, internationally compatible corporate reporting system that contributes to the flow of financial resources.

Practicing the accounting profession requires accountants to possess a set of standards that enables them to perform their required tasks effectively. Although these standards vary from one country to another according to the legal and accounting environment, several common standards cannot be disregarded (Merah, 2023, pp. 84–85):

- Skills, knowledge, and experience: accountants must possess the knowledge and skills necessary to perform their tasks effectively.
- Commitment to professional values: accountants must uphold accuracy, honesty, integrity, objectivity, transparency, and reliability.
- Oversight and regulation: accountants must be subject to supervision by a competent body with disciplinary powers to monitor professional conduct, identify violations, and take the necessary measures.
- Membership in a recognized accounting body: accountants should belong to a recognized professional accounting body that adheres to professional standards and approaches in areas such as registration, analysis, measurement, reporting, and advisory services.
- Work in diverse institutional environments: accountants should be able to work in companies of different sizes and organizational structures.
- Support for value management and decision-making: accountants can be key members of management teams or provide support by helping create and preserve value for stakeholders through relevant information for financial, managerial, and strategic decisions.

3. Accounting Professionals in Algeria:

Accounting professionals in Algeria are divided into three categories under Law No. 10-01 of June 29, 2010, concerning the professions of chartered accountant, statutory auditor, and certified accountant, published in Official Gazette No. 42 dated July 11, 2010.

Chartered Accountant: According to Article 18 of Law No. 10-01, a chartered accountant is a person who regularly practices, in his or her own name and under his or her responsibility, the tasks of organizing, examining, evaluating, and analyzing the accounting and various accounts of enterprises and bodies in cases provided for by law or under contractual arrangements for accounting expertise. The chartered accountant keeps, centralizes, opens, adjusts, monitors, and consolidates the accounts of enterprises and bodies with which he or she has no employment contract.

Statutory Auditor: Article 22 of Law No. 10-01 defines a statutory auditor as a person who regularly practices, in his or her own name and under his or her responsibility, the task of certifying the accuracy and regularity of the accounts of companies and bodies and their compliance with applicable legislation.

Certified Accountant: Article 43 of Law No. 10-01 defines a certified accountant as a professional who regularly practices, in his or her own name and under his or her responsibility, the task of maintaining and keeping the accounting records and accounts of traders, companies, or bodies requesting his or her services.

3.1. Legal Tasks of Each Accounting Profession:

Chartered Accountant:

- Financial and accounting auditing of companies and bodies.

- Providing financial, economic, and social consulting services to companies and bodies.
- Organizing, examining, evaluating, and analyzing accounting records.
- Centralizing, opening, adjusting, monitoring, and consolidating the accounts of enterprises and bodies.
- Informing contracting parties of the implications of their obligations and administrative actions related to the assignment.

Statutory Auditor:

- Examining the accuracy of annual accounts and their conformity with management-report data.
- Expressing an opinion in a report on internal-control procedures.
- Assessing the conditions for concluding agreements between the audited company and its affiliated institutions or bodies.
- Informing managers and the general assembly of any deficiency discovered or identified that could impede the continued operation of the enterprise or body.
- Certifying the accuracy and regularity of consolidated accounts on the basis of branch statutory auditors' reports.

Certified Accountant:

- Presenting accounting entries and changes in the assets of the company or body entrusted to him or her with maintaining its accounts.
- Preparing the social, criminal, and administrative declarations related to the accounting work assigned to him or her.
- Assisting in the preparation of financial statements.

Source: Prepared by the researchers based on Law No. 10-01, Articles 19, 23, 24, 42, 43, and 44.

3.2. Professional Accounting Organizations in Algeria:

The organization of accounting practice in Algeria, pursuant to Law No. 10-01, is overseen by several bodies whose powers and responsibilities are specified by law. These bodies include:

- National Accounting Council: To supervise the accounting profession in Algeria, the Algerian government established the National Accounting Council and provided it with a legal and regulatory framework, as with any professional accounting body seeking to develop the profession. The Council was established under Executive Decree No. 96-318 and placed under the authority of the Minister of Finance. According to this decree, it is an advisory body of an interministerial and professional nature responsible for coordination and synthesis in the field of research, the regulation of accounting standards, and related applications (Lafkir, 2024, p. 8).
- National Chamber of Chartered Accountants: Established pursuant to Law No. 10-01, the Chamber is a legal entity comprising accredited and qualified natural and legal persons authorized to practice as chartered accountants. It is managed by a national council elected by the Chamber's general assembly, with the Minister of Finance appointing a representative. Its principal responsibilities include organizing the profession and protecting its professional standards.
- National Chamber of Statutory Auditors: Established under Law No. 10-01, it is a legal entity comprising accredited and qualified natural and legal persons authorized to practice as statutory auditors. It is managed by a national council elected by its general assembly, with a representative appointed by the Minister of Finance.
- National Organization of Certified Accountants: Established pursuant to Law No. 10-01, it is a legal entity comprising accredited and qualified natural and legal persons authorized to practice as certified accountants. It is managed by a national council elected by its general assembly, with a representative appointed by the Minister of Finance.

The three professional bodies work to regulate the practice of the profession, defend the dignity and independence of practitioners, prepare internal regulations and codes of ethics, and ensure compliance with professional rules and customs.

3.3. Impact of Adopting Artificial Intelligence Technologies on Strengthening the Accounting Profession:

Modern technologies and emerging artificial intelligence technologies are among the most important developments that have significantly transformed accounting. Artificial intelligence refers to systems capable of performing tasks that simulate human activities, including reasoning, learning from previous experience, and completing tasks requiring mental processes.

The use of artificial intelligence in accounting can perform a wide range of tasks that may be difficult or impossible for humans to complete because many accounting tasks are repetitive and involve large volumes of data. This can reduce processing time and labor costs. The following are some accounting tasks in which AI can be used (Nana, 2023, p. 76):

- **Automated data processing:** One of the most important effects of AI on accounting is the automation of routine accounting tasks, including data entry and processing of basic figures. This automation enhances efficiency and accuracy while allowing accounting professionals to focus on other tasks. For example, AI-supported optical character recognition (OCR) can scan and process invoices much faster and with fewer errors than manual methods.
- **Data analysis:** A wide range of machine-learning algorithms can be used to classify transactions according to different criteria, such as expense type. This can help identify patterns or trends in financial data and assess their accuracy and completeness, thereby supporting an understanding of the past and forecasting the future through learning from and analyzing large volumes of data and information.
- **Fraud detection and risk assessment:** AI-powered fraud-detection systems can analyze large quantities of financial records and data to identify irregular patterns and unusual situations that may indicate fraudulent activity or other financial violations, enabling accountants to monitor financial transactions efficiently.
- **Improving the quality of financial information:** The more accurate and timely financial information is, the more useful accounting and financial reports become to decision-makers. The use of intelligent accounting software and devices can substantially improve financial efficiency, increase the accuracy of financial information, and enhance its quality. AI can also process, classify, and retrieve complex financial information according to its importance or relevance (Merah, 2023, p. 132).
- **Risk management and auditing:** AI technology enables companies to gain a comprehensive understanding of their business situation, monitor actual developments, and make informed forecasts regarding future business benefits and risks.

Accordingly, the application of artificial intelligence technologies will lead to a restructuring of accounting jobs and changes in financial work patterns, representing a revolution in accounting thought through the transition from manual accounting to electronic accounting.

3.4. Artificial Intelligence and the Practice of the Accounting Profession in Algeria:

Despite the benefits that artificial intelligence can provide to companies in general and the accounting profession in particular, several factors hinder the activation of AI technologies in the accounting profession in Algeria. The following are the main reasons preventing an acceleration of digital transformation in accounting practice in Algeria.

4. Weak Legal and Regulatory Framework for AI-Based Accounting Software:

The lack of harmony between law and technology can create a gap between the theoretical legal framework and technical implementation, thereby hindering technological development and allowing negative practices that may harm professionals and institutions. One of the most effective ways to establish such harmony is to ensure that technology specialists are initially familiar with relevant legislative frameworks.

A review of major international and local legislation concerning artificial intelligence shows that existing legislation does not comprehensively address the various dimensions of AI.

This issue represents a major challenge for the legal system, particularly the Algerian legislator, which has regulated certain aspects of this technology and its effects on several sectors. However, the intangible nature of software and algorithms makes artificial intelligence a modern, evolving, non-standardized, and highly fluid technological product, making it difficult to establish a legal framework governing its applications.

The current situation requires the adoption of specific legislation to regulate all investment operations in the digitalization sector, in which artificial intelligence represents the highest level of development, and to accompany projects with clear legal provisions from the idea stage until they leave the laboratory and become tangible realities. It is also necessary to reform other legislative provisions that continue to impede AI projects, such as public procurement rules. Since artificial intelligence is expected to become increasingly present across sectors and disciplines, all economic laws need to be adapted accordingly (Sakhraoui & Alami, 2023, pp. 12–13).

4.1. Shortage of Specialized Skills:

The reliance of educational curricula on traditional accounting practices is one of the main obstacles preventing accounting professionals from being adequately trained in artificial intelligence technologies and from acquiring advanced technical skills that enable them to work in a dynamic, technology-intensive environment and manage data efficiently.

In addition, there is a gap between university education and practical application. This gap has widened with the emergence of artificial intelligence technology because accounting education tends to emphasize accounting rules more

than professional mastery, which requires the development of innovative and analytical skills.

If accountants' professional skills are not updated, or if professional quality is not maintained at an appropriate standard, this will create a significant problem. It is therefore essential for accountants to continue learning and improving their capabilities, including managerial skills. Although learning such skills may not have an immediate impact on accounting systems in the short term, they become useful when accountants assume financial-management positions or roles involving the management and direction of teams.

4.2. High Costs of Implementing AI-Based Accounting Software:

Although savings are expected from the implementation of artificial intelligence technologies, the initial implementation cost cannot be ignored. Applying AI in accounting requires institutions to adapt to rapid technological changes and provide continuous training and development so that accountants can learn how to use new technologies effectively. Institutions may also face challenges in adopting new AI-related technologies, particularly in terms of cost and integration with existing systems (Mohammad & Amneh Khamees, 2020, p. 484).

The cost of accounting software based on artificial intelligence technology is not limited to the purchase price of the software; it also includes preventive maintenance costs and the costs of training accountants to use it, which may require substantial financial investment.

4.3. Low Level of Digitalization in Most Institutions:

Despite the positive effects achieved by artificial intelligence technology in many fields, its use in accounting is still at an early stage. It is largely limited to ready-made accounting software. Consequently, the benefits derived from artificial intelligence remain limited and weak, focusing mainly on financial-report disclosure rather than the introduction and processing of original documents. This is attributable to the lack of experience in implementing artificial intelligence among most institutions.

Conclusion:

This study has shown that, in Algeria, amid the growing orientation toward digitalization and the modernization of management methods, the adoption of artificial intelligence in the accounting profession is an important issue that deserves study and analysis. Despite the numerous advantages offered by this technology, institutions and professional practitioners face a range of technical, economic, human, and legal obstacles that may hinder its effective adoption and implementation.

The main findings of the study are as follows:

- The use of artificial intelligence in the financial and accounting fields will bring about a qualitative transformation for professionals. Financial functions related to accounting are expected to become increasingly automated, allowing AI to access larger datasets from a greater number of sources, thereby improving services, increasing profits, and keeping pace with developments more rapidly.
- The development of intelligent accounting systems in any institution necessarily contributes to the development of accountants. One of the positive outcomes of integrating accounting and technology is the advancement of accountants' professional level and the enhancement of their efficiency.
- Modern technologies and emerging artificial intelligence technologies are among the most important developments that have significantly transformed accounting and finance.
- The accounting profession in Algeria is being affected by digital technology; however, adopting the latest available technologies requires adequate technological infrastructure.
- Several obstacles hinder the activation of artificial intelligence technology in the accounting profession in the Algerian business environment, most notably the absence of an adequate legislative and regulatory framework for the use of digital technologies, insufficient academic and practical preparation of accountants, and the high cost of accounting software based on digital technology.

Study Recommendations:

Based on the findings reached in this study, the following recommendations are proposed, which may be useful to all parties directly or indirectly connected with the accounting profession:

- Practicing accountants need to devote greater attention to developing their professional skills and complying with ethical standards established by accounting bodies worldwide. They also need to continuously update their knowledge and skills because the accounting profession is undergoing a transitional phase.
- Higher-education institutions and vocational training institutions should offer relevant courses to students to enable them to adapt more effectively to these changes.

- Professional bodies should not limit their role to promoting the application of financial and managerial accounting principles; they should also support talented students and young practitioners in this field.
- The current situation requires the development of specific legislation to regulate all investment operations in the digitalization sector, in which artificial intelligence represents the highest level of technological development.
- Since artificial intelligence has become essential for developing financial and accounting systems, economic and accounting laws should be adapted accordingly in order to secure databases and protect systems against hacking and cyberattacks, while achieving efficiency and effectiveness.

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