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Artificial Intelligence and the Auditing Profession: The Role of the International Federation of Accountants

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Abstract
This study aims to analyze and evaluate the International Federation of Accountants' (IFAC) stance on promoting the use of artificial intelligence (AI) and its tools in the auditing profession, its impact on the skills and competence of audit practitioners, and its contribution to enhancing the process and methodology of financial statement auditing. This study employs a mixed (inductive and deductive) approach. It utilizes analytical methods, a key component of the inductive method, to analyze and evaluate IFAC's position on promoting AI and its tools in the auditing profession. The study then explores the impact of this stance on auditors' skills and competence, and its support for the process and methodology of financial statement auditing. The researcher also conducted a theoretically informed, quasi-systematic literature review of relevant research and studies. This review is based on the context outlined in this study. . AI practices impact the skills and competence of auditors and the process and methodology of auditing financial statements. This impact is crucial for auditors to achieve their objective of gathering evidence that enables them to form an opinion on whether the financial statements fairly represent, in all material respects, the results and financial position of the business. The use of AI technologies enhances the audit process and methodology, but does not replace them, by increasing efficiency, effectiveness, and accuracy. This study contributes to the literature on the role of the International Federation of Accountants (IFAC), the global representative of the auditing profession, in promoting the use of artificial intelligence (AI) and its tools in the auditing profession. It also examines the impact of AI on the skills and competence of audit practitioners and on enhancing the process and methodology of financial statement audits. Furthermore, to the best of the researcher's knowledge, this is the first study to address this role. In addition, the study suggests several areas for future research by scholars and academics considering the increasing use of AI tools in the auditing profession.
Keywords: International Federation of Accountants – Artificial Intelligence – Auditing Profession

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Introduction

It is worth noting, first and foremost, that the term "artificial intelligence" was coined in 1955 by computer scientist John McCarthy (Childs, M. & John McCarthy, 2011). He believed that "every aspect of learning or any other attribute of intelligence can, in principle, be described with such precision that a machine can be made to imitate it." Despite being studied for decades, the underlying technology has only recently flourished into usable tools.

The core of artificial intelligence lies in training computers, using massive data sources, to recognize patterns and perform required computational and relational tasks (SAS, 2019a). The human element of AI is present in this training; an AI system requires human inquiry, guidance, and observation to function successfully.

Machine learning (ML) and natural language processing (NLP) are two types of artificial intelligence. Machine learning stems from "pattern recognition" and the theory that computers can learn without being programmed to perform specific tasks (SAS. 2019b). Machine learning is the process of computer learning from data.

Thanks to this technology, machines can adapt independently and without limitations to produce consistent decisions and reliable results by identifying, classifying, or predicting patterns. It is worth noting that the International Assurance and Review Standards Board (IAASB) (https://www.iaasb.org/news-events/2022-03/iaasb-digital-technology-market-scan-artificial-intelligence-primer) has stated that artificial intelligence (AI) is a broad discipline of computer science that refers to the theory and development of computer systems capable of performing tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and translation. to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision making, and translation.

Artificial intelligence also describes a wide range of technologies, as illustrated in the diagram below. Many of the technologies we use daily have one or more of these capabilities. For example, a smart speaker has speech recognition (to convert our speech into text), natural language processing (to understand requests and generate responses), and machine learning (to improve the quality of responses over time). Thus, intelligence in this context is the ability to perceive or infer information, store it as knowledge, and apply it to decision-making. In computers, this is done by analyzing large amounts of data using advanced statistics (including probability analysis) to find patterns and make predictions.

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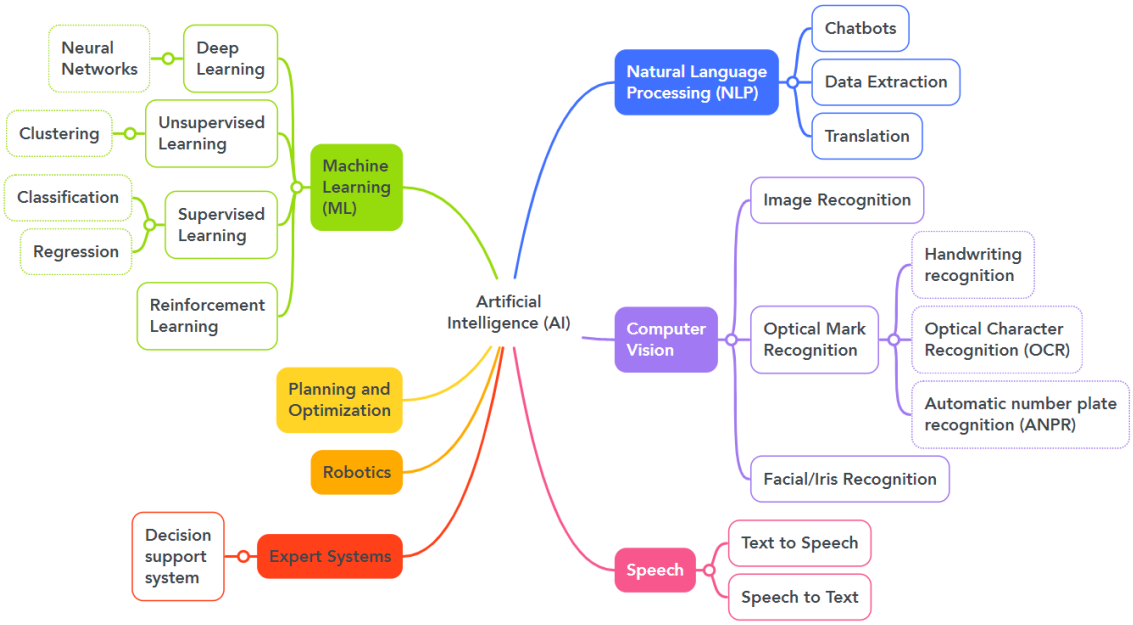

Figure (1) illustrates artificial intelligence (AI) techniques.

AI types include narrow AI (current AI, weak) and general AI (future AI, strong). Applications that model human behavior to perform a specific task or function, such as facial recognition and speech detection, are currently hypothetical but refer to machines with full human cognitive abilities.

One of the most important AI tools is algorithms. Although the term is often misunderstood, think of an algorithm as a recipe used by computers, or a limited series of well-defined instructions. It's typically used to solve a specific set of problems or perform a calculation. An algorithm takes input (such as a data set) and produces output (such as a pattern found in the data). It's like taking your ingredients and following a recipe to bake a cake. Therefore, algorithms are not exclusive to AI and are likely used in almost every review process to complete procedures such as determining sample sizes or performing data analyses, such as ratio analysis or regression.

Based on the foregoing, the current study aims to analyze and evaluate the International Federation of Accountants' (IFAC) position on promoting the use of artificial intelligence (AI) in the auditing profession, and its impact on auditors' skills and competence, as well as the process and methodology of auditing financial statements.

Problem and Research Questions

Artificial intelligence is a major contributor to modern technological innovations. Although its application is still under development, it is already being implemented and is

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operational, with potential for expansion in financial statement audits. Therefore, auditing financial statements requires extensive research that is time-consuming and demands significant effort from both the organization and its financial statements.

The objective of the audit is to gather evidence that enables the auditor to form an opinion on whether the financial statements accurately represent the organization in all material respects. Thus, the use of AI techniques enhances the audit process, but does not replace it. AI strengthens audit processes by increasing efficiency, effectiveness, and accuracy. Therefore, accounting and auditing practitioners should strive to research and become thought leaders in the future of their professions, transferring this specialized knowledge to senior leadership. These professionals have a role in ensuring that their organizations are innovative and adopt artificial intelligence to provide the best possible services to clients. Furthermore, professional organizations have an even greater role in developing and modifying the standards used in professional practice to keep pace with these global developments and changes.

Considering the above, this study was designed to answer the main question: What is the position of the International Federation of Accountants (IFAC) on promoting the use of artificial intelligence and its tools in the auditing profession, and its impact on the skills and competence of auditors and the process and methodology of auditing financial statements? To answer this main question, the study addresses the following sub-questions:

Q1: What is the position of the International Federation of Accountants (IFAC) on promoting the use of artificial intelligence and its tools in the auditing profession?

Q2: What is the impact of using artificial intelligence on the skills and competence of auditing practitioners?

Q3: What is the impact of using artificial intelligence on enhancing the process of auditing financial statements?

Q4: What is the impact of using artificial intelligence on enhancing audit methodology?

Importance of Study and Previous Studies

It is worth noting that the use of information technology in auditing is not a new phenomenon. For example, Computer-Assisted Audit Techniques (CAATs) are prevalent in the field of auditing today and have been used for a long time. However, the introduction of modern technologies such as artificial intelligence and machine learning, in addition to the increasing volume of data, were key factors that drew auditors' attention to the benefits of using information technology in auditing.

This has become a new trend in the changing world of auditing. Therefore, numerous studies have addressed the impact of artificial intelligence and its tools on the accounting and auditing profession.

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The beginning of this decade witnessed global interest from researchers, academics, organizations, bodies, and professional firms in the topic of artificial intelligence and its role. Or its impact on the future of the accounting and auditing profession.

Among the most important of these studies are the study by (Julia Kokina, Shay Blanchette, Thomas H. Davenport, Dessislava Pachamanoa.2025) on the topic of Challenges and opportunities for artificial intelligence in auditing: Evidence from the field, the study by (Nurul Afza Khusaini Mat Hussin, Nurul Ain Nadiah Mohd Bukhari, Nurul Hani Azyyati nor Hashim, Sharina Nur Azyyati Shaipul Bahari, Mazurina Mohd Ali.2024) on the topic of The Impact of Artificial Intelligence on Accounting Profession: A Concept Paper, and the study by (Aitkazinov, A. 2023) on the topic of The Role of Artificial Intelligence in Auditing: Opportunities and Challenges.

The following studies are also relevant: "AI and the Accounting Profession: Views from Industry and Academia" (Boritz, J. E., & Stratopoulos, T. C. 2023); "Big Data, Data Analytics and Artificial Intelligence in Accounting: An Overview" (Bose, S., Dey, S. K., & Bhattacharjee, S. 2023); "Digital Futures for Accountants" (Igou, A., Power, D. J., Brosnan, S., & Heavin, C. 2023); "Technology Adoption in Accounting: The Role of Staff Perceptions and Organizational Context" (Jackson, D., & Allen, C. 2023); and "Developing Accountants for the Future: New Technology, Skills, and the Role of Stakeholders" (Jackson, D., Michelson, G., & Munir, R. 2023).

The following studies were also discussed: Kamau, C. G., & Ilamoya, S. L. (2023), "Accounting Profession: African Perspective Review of Steps into the Future"; Khawaja, N., & Hamdan, A. (2023), "The Moderation Effect of Digital Leadership on the Relationship Between Artificial Intelligence and the Accounting Profession: A Review"; Grosu, V., Cosmulese, C. G., Socoliuc, M., Ciubotariu, M. S., & Mihaila, S. (2023), "Testing Accountants' Perceptions of the Digitalization of the Profession and Profiling the Future Professional"; and Han, H., Shiwakoti, R. K., Jarvis, R., Mordi, C., & Botchie, D. (2023), "Accounting and Auditing with Blockchain Technology and Artificial Intelligence: A Literature Review."

The study also addressed the following topics: The study by Kroon, N., & do Céu Alves, M. (2023), titled "Examining the fit between supply and demand of the accounting professional's competencies: A systematic literature review," also addressed this topic. Similarly, the study by Kureljusic, M., & Karger, E. (2023), titled "Forecasting in financial accounting with artificial intelligence – A systematic literature review and future research agenda," and the study by Landers, R. N., & Behrend, T. S. (2023), titled "Auditing the AI auditors: A framework for evaluating fairness and bias in high-stakes AI predictive models," were also discussed.

Also addressed were the studies by Li, C., Haohao, S. & Ming, F. (2020), titled "Research on the Impact of Artificial Intelligence Technology on Accounting"; Manap, A., Sasmiyati, R. Y., Edy, N., Buana, L. S. A., & Rachmad, Y. E. (2023), titled "The Role of Auditor Ethics as a Moderating Variable in the Relationship Between Auditor Accountability and Quality of the

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Audit"; Moll, J., & Yigitbasioglu, O. (2019), titled "The Role of Internet-Related Technologies in Shaping the Work of Accountants: New Directions for Accounting Research"; Cai, C. (2022), titled "Training Mode of Innovative Accounting Talents in Colleges Using Artificial Intelligence"; and Zhang, Y., Xiong, F., Xie, Y., Fan, X., & Gu, H. 2020), and its topic is The impact of artificial intelligence and blockchain on the accounting profession.

Other studies have also addressed this topic, such as the study by G. Almufadda, N. Ahmed Almezeini (2022), entitled "Artificial Intelligence Applications in the Auditing Profession: A Literature Review," and the study by K.M. Bakarich, P.E. O'Brien (2021), entitled "The Robots Are Coming… But Aren't Here Yet: The Use of Artificial Intelligence Technologies in the Public Accounting Profession," and the study by J.E. Boritz, T.C. Stratopoulos (2023), on AI and the accounting profession: Views from industry and academia; and CAQ (2024), on Auditing in the Age of Generative AI.

Other studies that have addressed the use of artificial intelligence tools in auditing include M. Cohen, A.M. Rozario, and C.A. Zhang (2019), on Exploring the Use of Robotic Process Automation (RPA) in Substantive Audit Procedures; L.A. Cooper, D.K. Holderness Jr., T.L. Sorensen, and D.A. Wood (2019), on Robotic Process Automation in Public Accounting; Deloitte (2023a), on Trustworthy AI; Deloitte (2023b), on Algorithm and AI Assurance; and M.K. Dodgson and A.J. Trotman (2022), on Lessons I learned: Challenges when conducting interview-based research in auditing and methods of coping; a study by A. Fedyk, J. Hodson, N. Khimich, and T. Fedyk (2022), titled "Is artificial intelligence improving the audit process?"; a study by A. Fedyk, J. Hodson, N. Khimich, and T. Fedyk (2022), titled "Is artificial intelligence improving the audit process?"; a study by L.E. Fotoh and J.I. Lorentzon (2021), titled "The impact of digitalization on future audits"; and a study by L.E. Fotoh and J.I. Lorentzon (2022), titled "Audit digitalization and its consequences on the audit expectation gap."

I also studied: Other studies addressed (I. Haq, M. Abatemarco, J. Hoops.2020), the topic of The development of Machine Learning and its implications for public accounting, the study (ICAEW.2023a), the topic of The future of audit technology, also the study (ICAEW.2023b), the topic of Risks of cognitive technologies, the study (J. Kokina, R. Gilleran, S. Blanchette, D. Stoddard.2021), the topic of Accountant as digital innovator: Roles and competencies in the age of automation, and the study (KPMG.2023), the topic of AI's role in enhancing trust in financial reporting and the capital markets.

Studies have also addressed the use of artificial intelligence in accounting and auditing, including the study by (O.M. Lehner, K. Ittonen, H. Silvola, E. Strom, A. Wuhrleitner.2022) on Artificial intelligence-based decision-making in accounting and auditing: ethical challenges and normative thinking; the study by (K.C. Moffitt, A.M. Rozario, M. Vasarhelyi.2018) on Robotic process automation for auditing; the study by (I. Munoko, H.L. Brown-Liburd, M. Vasarhelyi.2020) on The ethical implications of using Artificial Intelligence in auditing; the study

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by (A. Perdana, W.E. Lee, C.M. Kim.2023) on Prototyping and implementing Robotic Process Automation in accounting firms: Benefits, challenges, and opportunities to audit automation; and the study by (R. Samiolo, C. Spence, D. Toh.2023). Its subject is Auditor judgment in the Fourth Industrial Revolution; the study by R. Seethamraju, A. Hecimovic (2022), its subject is Adoption of artificial intelligence in auditing: an exploratory study; and the study by C.A. Zhang, S. Cho, M. Vasarhelyi (2022), its subject is Explainable artificial intelligence (XAI) in auditing.

Despite all these studies, none of them addressed the position of the International Federation of Accountants (IFAC) on promoting the use of artificial intelligence in the auditing profession, and its impact on the skills and competence of auditors and the process and methodology of auditing financial statements.

Study Objective

The current study aims to analyze and evaluate the position of the International Federation of Accountants (IFAC) on promoting the use of artificial intelligence in the auditing profession. To achieve this objective, we address the following sub-objectives:

1- To clarify the position of the International Federation of Accountants (IFAC) on promoting the use of artificial intelligence and its tools in the auditing profession.

2- To determine the impact of using artificial intelligence on the skills and competence of auditing practitioners.

3. Determine the impact of using artificial intelligence on enhancing the financial statement audit process.

4. Determine the impact of using artificial intelligence on enhancing audit methodology.

Methodology and Approach to Study

Accounting research methodology typically relies on inductive and deductive reasoning, also known as the mixed method. This study employs these methods to answer its main research question: "What is the position of the International Federation of Accountants (IFAC) on promoting the use of artificial intelligence and its tools in the auditing profession?" Therefore, the analytical method, one of the most important tools of the inductive approach, is used in this study to analyze and evaluate IFAC's position on the subject, and to determine the impact of this position on auditors' skills and competence, and on supporting the process and methodology of auditing financial statements.

Study Structure and Scope

Within the framework of the problem, importance, and objective of this study, this research analyzes and evaluates IFAC's position on the use of artificial intelligence in the auditing profession. It then identifies the impact of using artificial intelligence on auditors' skills and competence, and on supporting the process and methodology of auditing financial statements. The study concludes with findings, recommendations, and suggestions for future research.

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The positions of the International Auditing and Assurance Standards Board (IAASB), the International Ethics Standards Board (IESB), the International Accounting Education Standards Board (IAEB), and the Public Sector Accounting Standards Board (PSAB) on artificial intelligence are excluded from this study and will be addressed in future research, God willing. God.

Artificial Intelligence (AI) and IFAC

It is worth noting – first and foremost – that the International Federation of Accountants (IFAC) has created a topic on its homepage titled "Artificial Intelligence & Technology: Artificial Intelligence & Accounting" (https://www.ifac.org/knowledge-gateway/discussion/artificial-intelligence-accounting.2025). IFAC has emphasized that with the increasing use of generative AI tools in recent years, their optimal application and management have become a crucial part of the ongoing discussion about modern accounting practices.

AI presents both new opportunities and risks for professional accountants. To keep professional accountants and accounting firms informed about the AI content in IFAC's library, given that much of the discussion surrounding AI concerns its capabilities, IFAC and its network have categorized AI and accounting content into five sections, specifically addressing the following:

Category 1: How professional accountants are currently using AI. Category 2: Resources exploring generative and analytical AI capabilities.

Category 3: Risk and Governance

Category 4: Artificial Intelligence in Education.

Category 5: Agent AI.

In September 2024, the International Auditing and Assurance Standards Board (IAASB) launched a new page on its website titled "Technology Position" (https://www.iaasb.org/publications/technology-position-statement). This page serves as a guide on how to adapt its work to encompass the intersection of auditing, assurance, and technology. It represents a significant step forward in the Board's ongoing commitment to enhancing the quality and relevance of its standards in the face of rapid technological advancements. The page focuses on three key components:

1) Technology Position Statement: This statement outlines the IAASB's commitment to facilitating and encouraging the use of technology by practitioners and firms, ensuring the continued relevance and effectiveness of its standards. It also details how the IAASB fulfills this commitment, including embracing technology-based innovations and removing barriers to technology adoption within its standards.

2) Implementing the Technology Stance: This component details the IAASB's strategy for implementing the statement by identifying opportunities for new or revised standards, as well as developing informal materials and guidance. The IAASB is currently conducting gap analyses to ensure that existing standards remain aligned with technological advancements.

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3) Monitoring and Adapting to Technological Trends: The IAASB will continuously monitor technological trends to ensure its standards adapt and remain relevant to the rapidly changing landscape.

In 10/2024, the IAASB issued a new statement on its technology stance to guide its approach to embracing the convergence of audit, assurance, and technology. This forward-looking statement highlights the potential of technology to improve the quality of work and underscores the IAASB's commitment to driving innovation by encouraging and enabling the integration of technology across all functions.

The statement outlines eight key actions that guide the IAASB in fulfilling its commitment to facilitate and, where appropriate, encourage firms and practitioners to adopt technology. The broader Technology Position Statement also details the initial steps the International Auditing and Assurance Standards Board (IAASB) will take to implement these commitments, establish an ongoing process for monitoring technological trends, and ensure the statement evolves with the ever-changing technological landscape. These key actions include:

1) Embrace Technology-Driven Innovation.
2) Remove barriers in the Standards, real or perceived, to practitioners using technology.
3) Introduce Requirements and Application Material Relating to the Use of Technology in Engagements.
4) Address the Impact of Technology Used by Reporting Entities.
5) Strike the Right Balance When Referring to Opportunities and Risks Associated with Technology.
6) Align with Principles of Ethics and Ethical Requirements.
7) Ensure Scalability and Proportionality.
8) Convene Stakeholders and Foster Continuous Engagement.

The International Auditing and Assurance Standards Board (IAASB) has also pointed out that there are challenges when using artificial intelligence (AI), whether by auditors in their procedures or by audited entities in their business operations. Therefore, the associated risks must be identified and managed appropriately. Many regulatory bodies and institutions have developed methodologies that provide a framework for identifying and managing AI-related risks. In September 2021, the COSO Committee issued new guidance outlining how to apply the "COSO Framework and Principles to Assist in the Application and Scaling of AI." This guidance identifies five areas of AI-related risks:

1) Bias and reliability breakdowns due to inappropriate or unrepresentative data.
2) Inability to understand or explain the outputs of an AI model.
3) Inappropriate use of data.
4) Vulnerabilities that could be exploited by malicious actors to obtain data or manipulate the AI model; and

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5) Societal pressures resulting from the rapid adoption and transformation of AI technologies. These guidelines conclude that appropriate risk management is essential to ensure that AI solutions are reliable. "Proven and effective," AI auditing may require a different skill set than current auditing processes, and many companies are updating their recruitment strategies, training programs, and audit methodologies to meet the growing need for AI expertise.

Furthermore, the IAASB noted that the global AI market is expected to achieve a compound annual growth rate (CAGR) of nearly 40% over the next five years. While AI technologies such as natural language processing and speech recognition are experiencing significant development, other technologies, such as deep learning and generative AI, have considerable room for improvement. Here are some notable recent developments:

1) Regulation and Explainable AI: One of the issues raised with AI concerns the negative impact of biases in algorithms and the harm they can cause. In a recent survey, more than one in three companies reported losses (in revenue, customers, or employees) due to AI bias in their algorithms. In response, regulations are expected soon. The European Union, in its white paper "On Artificial Intelligence – A European Approach to Excellence and Trust," noted that explainability is a key factor in building trust in AI. Therefore, many companies are expected to strive to implement explainable AI, so that humans can understand the outcomes of the solutions.

2) Effective AI: DeepMind, the company behind AlphaGo, the first game to defeat a professional Go player, has developed a massive AI-powered language model—a statistical tool for word prediction—called RETRO (Retrieval Enhanced Transformer). This AI technology, designed to generate persuasive texts, chat with humans, and answer questions, reportedly outperforms neural networks 25 times larger by using a text database.

3) Decision-Making Intelligence: Decision-making intelligence, identified by Gartner as one of the top technology trends for 2022, involves using AI to enhance and support human decision-making processes. Peak.ai, a UK-based startup, raised $75 million in a Series C funding round in August 2021 to build its "decision intelligence" platform. This platform aims to expand into new markets and help non-tech companies make AI-driven decisions.

Given the intersection of AI with many other topics in accounting, the International Federation of Accountants (IFAC) has published several articles on the subject. Among the most notable is Sandra Balogun's article, "The Future of Accounting: How to Stay Relevant in the Age of AI," published in 2025.

Balogun, a Forbes Council Member, argues that AI will not replace accountants, but accountants who use AI will replace those who don't. The world is constantly evolving, from how we interact to how we conduct business. Almost every sector has been impacted by AI, and accounting is no exception. Therefore, the profession faces a real challenge as students are not rushing to become accountants. Many see their peers thriving in the content economy—creating, building, and earning in fun and rewarding ways—while accounting is still perceived as "boring."

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Sandra, who has worked in accounting for a decade, emphasizes that she understands this perception. While the work can be routine, she also knows that accounting is the language of business.

In this new world of artificial intelligence, accountants can advance as innovators, not just numeracy analysts, through three avenues drawn from her career and personal experience using AI tools:

1) Become an Early Adopter: Artificial intelligence will create new jobs, new industries, and new rules. This means that today's accountants can become accountants in this new industry. To succeed in the age of AI, we must be willing to learn anew—not necessarily in classrooms, but through experience, experimentation, and early adoption. Accountants will still need to understand standards or at least know where to find them. Our work is increasingly shifting toward an auditing role. AI can accelerate the process, but it cannot replace our judgment. This is where an auditing mindset becomes essential: trust with verification. In my work, I have used AI not only to speed things up but also to understand the reasoning behind answers. Then, when I receive accounting processing from AI, I ask, "Why is this correct? What is logic?" This process makes me a smarter auditor and deepens my understanding of standards.

2) Become a Creator: We are still discovering what AI can do. Technology will only shape the future to the extent that we allow it to. As someone once said, "If you can dream it, you can achieve it." This means that accountants must either sit back and wait for tools to be handed to them or become creative and contribute to shaping those tools. No one knows your work or your weaknesses like you do. AI gives you the opportunity to solve those problems or at least be part of the solution. So, start by examining your process, documenting your steps, and then ask:

a) What parts can AI handle?

b) What parts require human intervention?

Remember, the better the guidance, the better the outcome. The saying "waste in, waste out" still holds true. What AI delivers reflects what you feed it.

3) Remember Your Why: Learning every new emerging technology can seem overwhelming. That's why connecting with your reason is essential. Fear isn't a sustainable motivator. Don't learn these tools out of fear of losing your job or clients; learn them out of growth and curiosity. When you learn with a growth mindset, you rediscover the fun and creativity in your work, and consequently, you'll collaborate more easily and focus on the tools that help you achieve your goals.

In general, Sandra emphasized that artificial intelligence (AI) hasn't erased the accounting world but rather reshaped it. As accountants, we have a choice: resist change or adapt. By being early adopters, innovators, and strategic thinkers, we won't just keep pace with AI but lead the evolution of the profession. The question isn't "Will AI take over my job?" but rather "Am I preparing myself to lead in this new world?" As Danielle Supkis Cheek (2025) explained in her

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article, "AI Prompt Writing: The Basics for Professional Accountants," there are proven strategies for writing more effective AI-generated claims. The S.T.A.R. (Situation, Task, Appearance, Refine) methodology offers practical advice and best practices. The article also covers several other key topics, including:

- New AI regulations
- Ethical frameworks for AI adoption
- Automatic Retrieval Generation (RAG)
- Coherent Thought Inference (COT)
- Claim libraries.

Danielle emphasized that AI represents a tremendous opportunity for the accounting profession and a potential equivalent for small and medium-sized practices. However, with this technology evolving so rapidly, it is essential for professionals to keep pace. Under the heading "Artificial Intelligence & Technology Small- and Medium-sized Practices (SMPs): Practice Transformation Hub for Small and Medium Practices (SMPs)," the International Federation of Accountants (IFAC) highlighted a roadmap to the future, quoting Barry Melancon, President and CEO of the American Institute of Certified Public Accountants (AICPA) and CEO of the Association of International Chartered Certified Accountants (ACCA): "We will not recognize the accounting profession for the next ten years. In fact, it is likely to happen within the next five years."

As IFAC pointed out, time is of the essence in our fast-paced, complex, and ever-changing global world. A study by Accenture predicted that advancements in robotics would automate or eliminate 40% of core accounting functions by 2020. It is highly likely that within 10 years, robots will possess sufficient in-depth knowledge of accounting and auditing standards to answer all related technical questions. Is the accounting profession prepared for such rapid change? Therefore, the Accounting and Auditing Standards Committee of the International Federation of Accountants (SMPC) believes there is a critical need to raise awareness of what the future may hold so that practitioners can make informed decisions regarding their strategic plans. Companies often prioritize customer service over planning for the rapid changes impacting the profession. Consequently, what drove a company's success in the past may not be what drives its success in the future. It is therefore essential that leaders take the time now to consider their company's future and seize new opportunities.

IFAC has emphasized that small and medium-sized enterprises (SMEs) are uniquely positioned to support their clients in this unprecedented environment. Regardless of jurisdiction, accountants, particularly those working with SMEs, remain the preferred advisors for these businesses. The professional advice accountants provide to SMEs is linked to improved performance through enhanced survival and growth rates, improved decision-making processes, and superior financial performance. To capitalize on this unique advantage, SMEs must leverage

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established trust with their clients to strengthen their position and continue providing the services they need, while adhering to international ethical standards.

IFAC requires professional accountants in practice to adhere to the highest ethical standards. Furthermore, member organizations of the International Federation of Accountants (IFAC) are required to adopt and implement ethical standards no less stringent than those set out in the "Guide to Ethics for Professional Accountants (including International Independence Standards)" issued by the International Ethics Standards Board for Accountants (IESBA). In general, IFAC believes that, regarding the roadmap to the future, companies can capitalize on new opportunities relatively quickly. The main challenge lies in recognizing these new opportunities and being prepared to adapt to them. This transformation includes:

1) Strong leadership.
2) Technology adoption
3) Recruiting and retaining the next generation of accountants.
4) Adopting new approaches to training, learning, and continuous development
5) Identifying and meeting evolving market needs

IFAC emphasizes that there is no single model for how practices will succeed in the future, but there are four key areas for practice transformation:

1. Embracing change.
2. Leveraging technology.
3. Focusing on talent management.
4. Developing the company's operating model and building consulting services.

The Impact of AI on Auditor Skills and Competencies

In June 2025, a prominent panel discussion hosted by the International Association for Accounting Education and Research (IAAER), the International Auditing and Assurance Standards Board (IAASB), the Independent Regulatory Body of Auditors in South Africa (IRBA), and the International Federation of Accountants (IFAC) brought together audit professionals, educators, and regulatory bodies to explore how accounting education can evolve in the face of rapid technological change. Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian (2025), in their paper "Embracing the AI Frontier: Rethinking Auditor Skills and Education," noted that as AI redefines the audit profession, the skills required for success are undergoing a radical transformation. The following are key insights into the impact of AI on auditor skills, competencies, and continuous professional development:

1) Leveraging AI for Efficiencies & Insights: Participants emphasized that the use of revolutionary technologies, such as artificial intelligence, offers promising opportunities for the auditing and assurance profession. New accounting and financial systems enable companies to collect more data than ever before, and new technologies enhance data analysis capabilities. For audit firms, this provides new possibilities for understanding audit risks and planning more

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Vol.5 No.1, Jan. 2026
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appropriate audits. It also allows audits to become more efficient and in-depth. These benefits will extend to finance and accounting teams within organizations as well. Thanks to these new tools, chief financial officers and their teams are increasingly seen as business partners, providing valuable data and information that enriches business strategies and operational decision-making. Auditors will then be able to leverage these technologies to focus less on routine tasks and more on the technical and critical thinking skills that attracted them to the profession.

2) Digital Fluency: New Skills Needed: Participants emphasized that future audit professionals will need more than traditional accounting knowledge. As automation and artificial intelligence become increasingly integrated into quality assurance processes, digital literacy, data analytics, and professional skepticism are essential competencies. To effectively utilize these new tools, auditors will need advanced skills and competencies beyond those expected upon entering the job market. In fact, one participant remarked that "year two of today should be year one of tomorrow." Companies confirmed that, in addition to technical knowledge of auditing and accounting, future auditors will need the following skills and abilities:

Skills and Abilities	Description
Technology-focused	Auditors should be eager to adopt and adapt new technologies in their work. They should not be resistant to change but rather prepared to learn continuously as new technologies emerge.
Analytical	The growth of data and information means that auditors must be able to collect, process, and interpret massive datasets. Part of this involves understanding how to effectively use artificial intelligence (AI) to enhance their own capabilities, as needed.
Critical thinkers	In a future world where AI is increasingly used to collect and document audit evidence, auditors will need advanced critical thinking and auditing skills. Professional judgment and skepticism will become even more important when reviewing work. Auditors will need to ask: Does this make sense? How do I know this is the right answer?
Ethics	When using AI, auditors will need to be aware of the ethical considerations involved. For example, they will need to consider potential biases in AI outputs and risks such as over-reliance.
Creativity	In an environment of evolving technology and rapid change, creative and innovative thinking can lead to valuable innovations that enable auditors to rethink their methodologies and audit software solutions. In the world of artificial intelligence, this human skill is becoming increasingly important for auditors, as it

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Vol.5 No.1, Jan. 2026
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	is a fundamental part of understanding the organization being audited and how it operates.
Communication	In an environment of evolving technology and rapid change, creative and innovative thinking can lead to valuable innovations that enable auditors to rethink their methodologies and audit software solutions. In the world of artificial intelligence, this human skill is becoming increasingly important for auditors, as it is a fundamental part of understanding the organization being audited and how it operates.
Collaboration	The growing focus on non-financial information, such as sustainability data, highlights the importance of collaboration skills.
Coaching	AI is likely to eliminate many of the traditional "first-year" learning tasks for new auditors. Existing auditors will need to ensure they can help develop new auditors by joining the firm despite the elimination of these tasks. The ability to train others will be essential for building the team skills needed for the future.
Delegation	The audit team of the future will include AI agents as part of it. Auditors will need to understand the tasks and the extent to which they can be effectively delegated to their AI team colleagues as needed.

3) The Continuing Importance of Human Judgment: Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian argue that despite the analytical power of artificial intelligence (AI), it cannot replace professional skepticism and ethical judgment. These are traits acquired through experience, mentorship, and exposure to the complexities of the real world. Therefore, AI should never replace ethical judgment. The danger lies in the fact that novice auditors may accept AI outputs without question unless they are trained to challenge them. The study emphasizes the importance of educating future auditors not only about the use of AI but also about understanding the ownership of data by AI processes and their ethical implications. This can be achieved by offering the following:

3/1 Tips for Public Accounting Offices (PAOs) and Accounting Educators to Prepare for the AI Frontier: Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian emphasize that significant investment in time and training will be needed to prepare auditors. For this future, the roundtable participants put forward several practical suggestions on how to improve the content and delivery of accounting education, as well as how to consider potential areas of challenge.

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
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3/2 Accounting Education Content: Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian (2025) emphasized the following:

3/2/1 Public interest and capital markets should be central: What skills and competencies will the next generation of financial managers and leaders need? Consider the risks of knowledge loss, could we lose the competencies needed for the future of capital markets?

3/2/2 Work closely/collaboratively with employers to understand needs: Students are often drawn to the accounting profession because of its promising career opportunities. To ensure that qualifications or certificate programs remain relevant, collaborate with employers to understand what they are looking for in future hires.

3/2/3 Scan for future technology developments – but with caution: New technologies are converging, for example, with the integration of artificial intelligence and data analytics tools. It's important to be aware of the direction this development is taking. However, be wary of technology fatigue and hype cycles. Focusing on maximizing transferable skills and knowledge, as well as fostering adaptability, is crucial, since the technologies students are trained in are often outdated before they enter the job market.

3/2/4 Ask whether all current content is still relevant: Review the content to see what can be removed, for example, outdated skills that are no longer needed considering new technologies. Also, consider whether the depth of instruction in any subject can be reduced.

3/3 Accountancy Education Delivery: Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian emphasized the following:

3/3/1 Embed Technology: Review the curriculum to see how technology is integrated into all aspects. This will establish the expectation that the auditing profession is technology focused.

3/3/2 Encourage Students to Use New Technologies, Including Artificial Intelligence (AI): Auditors will need to adapt to new technologies throughout their careers. Encourage students to do so throughout their education. This will provide them with practical experience and knowledge about how to use AI ethically before entering the profession.

3/3/3 Update Course Formats: Critical thinking will be central to the future of auditing. Ensure that learning places critical thinking at its core. Consider how to update learning formats to enhance and facilitate this, for example, by incorporating realistic simulations or using flipped classroom models.

3/4/3 Enhance the Skills and Knowledge of Accounting Educators: Accounting educators themselves need to ensure their continuous development and possess the skills, knowledge, and competencies necessary to train the next generation. Staying informed about the latest practices with audit firms will be a crucial part of this.

3/4 Potential Challenges: Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian highlighted the following:

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Vol.5 No.1, Jan. 2026
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3/4/1 Engage on local regulatory restrictions: In some jurisdictions, making changes to auditing qualifications can be challenging. Therefore, proactive engagement with regulators and other stakeholders is necessary to understand how to work together to ensure that qualifications and certifications remain relevant and fit for purpose.

3/4/2 Identify local education gaps: Gaps in early and secondary education may mean that some aspiring auditors lack the essential skills and knowledge needed to successfully complete an accounting education program. It may be necessary to develop supplementary programs to support these programs. Consequently, local professionals may also find it beneficial to engage with key stakeholders to encourage and support further improvements in early and secondary education programs.

3/4/3 Bolster skills and knowledge of accounting educators: Accounting educators themselves need to ensure their continuous development and that they possess the skills, knowledge and competencies necessary to train the next generation, and therefore staying in touch with audit firms about the latest practices will be an important part of this.

3/4/4 Be Aware of the Potential Loss of Entry-Level Jobs Due to AI: These roles typically provide early-career accountants with their first professional job, allowing them to develop the skills necessary for the rest of their careers. With these potential job reductions, accounting educators and firms will need to consider how to develop the skills of the next generation of accountants.

Overall, despite the accelerating pace of change in AI, the following must be considered:

1) The structures that develop future professionals will change. The world of work will be significantly different by the time current aspiring auditors complete their accounting education programs. Therefore, it is essential to

2) Work together to prepare for this, as work, regardless of how it is delivered, will remain critical to protecting the public interest.

3) Consider training future auditors not only in the use of artificial intelligence, but also in thinking alongside it.

The Impact of AI on Financial Audits

In a study by Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian (2025), titled "Embracing the AI Frontier: The Transformative Impact of AI on Audit Firms & Methodologies," they indicated that emerging technologies, such as artificial intelligence, are reshaping the auditing profession. Faced with these rapid changes, the auditing profession is now examining how to seize new opportunities and prepare for the future of auditing.

Therefore, Crosley G. and A. Anderson (2018) argue that the financial auditing process has undergone relatively little radical development since the implementation of the Sarbanes-Oxley Act of 2002. While the adoption of computers instead of pen and paper has changed the way work is done, the historical nature of the process remains unchanged. Thus, the financial auditing process is in a maturing phase, characterized by slowness, a lack of profit margins, and

International Journal of Accounting and Management Scienc
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a decline in innovation. Technology allows auditing to evolve beyond mere repetition and linking it focuses on today, delving deeper into the world of analysis and information processing. Technologies enabling artificial intelligence (AI) to be effective, efficient, and applicable in the professional services sector are nearing maturity and ready for implementation.

AI not only changes the audit process but also has the potential to completely transform it, particularly in its planning, internal control assessment, and execution of core procedures. The steps and outcomes of the audit remain the same, whether traditional or AI-assisted. However, the method of task completion is what truly demonstrates the impact of AI. Below is a comparison of audit procedures with and without AI technologies. While some parts of the process can be automated, human intervention and judgment are still required to reach a conclusion, as follows:

First: Planning Phase - Auditor and AI Computer Comparison:

Issa, H.; T. Sun; M. A. Vasarhelyi (2016) indicated that auditing begins with the planning phase, where During this process, the auditor gains an understanding of the client's business sector and organization; conducts a risk assessment; and determines the nature, scope, and timing of actions based on their reliance on internal controls.

In a traditional audit, these tasks are accomplished through the auditor's physical examination of the sector and organization, discussions with management, manual notetaking, review of board meeting minutes, and the use of judgment to assess environmental and inherent risks associated with specific financial statement items and significant transaction classes. Ultimately, the auditor determines the extent of reliance on internal controls. Traditional steps rely on the auditor's professional judgment and uncertainty. Artificial intelligence (AI) can automate these processes and eliminate a degree of uncertainty.

PricewaterhouseCoopers Japan (2018) indicates that in AI-assisted auditing, the objectives of the planning phase are the same as those of a traditional audit. Therefore, AI can collect and analyze client and sector data, such as:

1) organizational structure (through analysis of organizational charts or details of the human resources information system) and

2) operating methods, accounting and financial systems, from publicly available data automatically collected online and past files from the Securities and Exchange Commission (SEC). And the stock exchanges (SEC).

3) Documents submitted by clients and fed into the AI system, either through connected sources or through manual (human) collection and uploading.

Issa, H.; T. Sun; M. A. Vasarhelyi (2016) add that AI can automatically generate a risk assessment report based on past years' worksheets, the business environment, and industry trends, for the auditor to evaluate. Natural language processing (NLP), along with voice recognition technology, can record, summarize, and prepare minutes of meetings held with the client. Using machine learning (ML), the AI can assess business understanding, risk assessment,

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
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DOI: https://doi.org/10.56830/IJNZ1133

and prior audit information to suggest a level of reliance on internal controls. The AI generates a level of reliance based on the data provided. The data used by AI systems must be complete and accurate to ensure the reliability of the outputs.

The auditor can then use the suggested level of reliance, personal knowledge, and judgment to determine control risks and plan the nature, scope, and timing of actions. From the foregoing, the AI tools used in the audit planning phase have a moderate impact on how the tasks of this phase are accomplished, and on some automated tasks, especially in basic research. However, the overall objectives of this phase depend largely on judgment and cannot be significantly affected by the application of AI, as this phase uses somewhat complex tools that are not yet fully refined but are on the path to completion. After understanding the business environment, assessing the level of control risk, and finalizing the audit plan, the evaluation and testing can begin.

Second: Evaluation of Internal Controls Phase – Auditor and AI Computer Comparison:

Celonis (2025) indicated that the objective of evaluating internal controls is to deepen the understanding of the client's internal control system and to assess the extent to which these controls are implemented and operational to evaluate their reliability. In a traditional audit, this process often involves reviewing internal control policies and procedures and conducting interviews with those responsible for key operations, such as sales management, accounting, and finance, regarding sales operations, to understand the internal controls in place and the organization's operations in general.

As PricewaterhouseCoopers Japan (2018) noted, the details of these interviews are recorded manually and published on working papers. Following the interviews, the auditor conducts an operational test, which typically involves observing employees performing their duties, re-enacting processes, and examining documents. These processes are relatively straightforward, either the control works as intended or it doesn't—meaning this area is highly susceptible to automation. A thorough understanding of the various business processes is a key consideration when evaluating the effectiveness of internal controls on financial statements.

Artificial intelligence (AI) can help reduce the effort required and improve the accuracy of business process documentation. One AI tool that helps improve this documentation, and in some cases automate it, is process mining. This provides objective, fact-based insights, derived from actual event records, that help review, analyze, and improve current business processes by answering questions related to compliance and performance.

PricewaterhouseCoopers Japan (2018) adds that by using existing system data, process mining extracts insights into business processes and automates the creation of business process documentation. An auditor assessing the internal control environment can also use AI-powered voice recognition and natural language processing (NLP) to automatically generate worksheets from interviews.

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

In general, machine learning can be used to examine documents and determine whether necessary approvals have been obtained as part of the control testing process. AI tools at this stage can significantly impact the audit process by automating many time-consuming routines. This leads to a more accurate assessment of internal controls and a deeper understanding of business processes, resulting in more efficient and effective substantive testing and more effective overall audit outcomes.

Third: Substantive Procedures Phase – Auditor and AI Computer Comparison:

Brennan, B.; M. Baccala; M. Flynn (2017) indicated that substantive procedures constitute the third major phase of the audit process. This phase involves examining details (transaction categories, account balances, and disclosures) and analytical procedures to detect material misstatements. The extent of substantive procedures performed is directly related to the assessed audit risk level, which comprises control risk, subjective risk, and detection risk. While traditional audits include many substantive procedures—such as human inspection to reconcile a sample of physical warehouse inventory with the recorded inventory, sending confirmation letters to the client's customers to verify balances and check for discrepancies, examining supporting documentation for sales orders and cash receipts, and reviewing journal entries that correspond to circumstances that might indicate fraud—the substantive procedures themselves are not always the most significant.

In addition to the analytical comparison of auditor estimates, industry averages for sales, and other metrics with the organization's actual performance, these processes can be completely reformed through the application of artificial intelligence. This transformation has already begun, with digital applications, barcodes, and drones helping to monitor and match inventory, and electronic platforms managing confirmation requests between auditors and customers, using high-level encryption technologies. As noted by SAS Institute Inc. (2019), machine learning and natural language processing (NLP) techniques enable the examination of sales order documents and cash receipts, automatically matching discrepancies. Machine learning can identify instances where journal entries may be fictitious, such as abnormally large amounts, unused accounts, and year-end adjustments. It can also identify suspicious transactions with unusual patterns. Furthermore, machine learning can influence analytical audit procedures by analyzing market trends and competitor movements to estimate sales.

Thus, AI techniques related to substantive procedures are the most mature techniques in the audit process, and the ability of AI to continuously analyze 100% of the data, rather than just samples, provides a more accurate opinion. As noted by Shin, Minkyu, Kim, Jin, van Opheusden, Bas, Griffiths, and Thomas L. (2023), the use of artificial intelligence for analytics has been limited due to the complexity of client environments. Many client companies use more than one Enterprise Resource Planning (ERP) system, including legacy systems with disparate database schemas. Depending on the situation, this challenge can be addressed with automated tasks, such

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

as data extraction from processes, or with a structured approach, such as Extract-Transform-Load (ETL), to integrate disparate data. ETL is a type of data integration that refers to the three steps (data extraction, transformation, and loading) used to integrate data from multiple sources.

Based on the above, audit practitioners can use this approach in a hybrid technology environment by converting data into a shared data model and using an independent database (note: this can be owned by the client or the audit firm, depending on their data privacy preferences). The auditor can then use artificial intelligence to perform functions unavailable in legacy systems. This enables the same level of visibility across the system as in a ready-to-use enterprise resource planning (ERP) system like SAP.

Fourth: Closing Procedures – Auditor and AI Computer Comparison:

Issa, H.; T. Sun; M. A. Vasarhelyi (2016) noted that after conducting controls, detailed analysis, and other analytical procedures, the time comes to form an opinion on the client's financial statements and issue an audit opinion. These procedures include compiling the audit findings and issues, manually assessing potential implications, and formulating an opinion (unqualified, qualified/modified, or negative – abstention). With the help of artificial intelligence, this can be calculated based on the client's risk of material errors, the number of errors detected and their impact, and the audit risk assessment can be automatically evaluated.

This can thus transform the opinion from a category to a connected, graded numerical range, removing some of the ambiguity that a definitive opinion might entail. The general audit opinion is still based on professional judgment, but with the help of artificial intelligence, the opinion is better supported by facts and figures.

Issa, H.; T. Sun; and M. A. Vasarhelyi (2016) add that after forming an opinion and writing the audit report, this step is usually completed using the International Standard on Auditing (ISA) 700 template. Natural Language Processing (NLP) can then automatically generate a draft audit report, including the known final opinion, audit procedures, material misstatement risks, and conclusions.

Issa, H.; T. Sun; and M. A. Vasarhelyi (2016) further explain that Therefore, audit firms need to carefully consider the AI tools used in their operations. Some AI tools require on-premises installation, while others are cloud-based for processing and storing sensitive data. These considerations can be addressed through a vendor management process that ensures the AI software meets certain acceptable standards, such as Service Organization Control (SOC 2). SOC 2 incorporates Trust Services principles related to security, confidentiality, and privacy, and provides additional certifications and endorsements, such as ISO 27001 from the International Organization for Standardization (ISO). As with any tool chosen by the auditor, care must be taken to ensure that the AI does not pose any risk to the client's system, security, confidentiality, or privacy.

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

Faggella (2019) notes that many audit firms, including the Big Four, are implementing artificial intelligence (AI) in their audit processes. These firms have either developed their own AI software or partnered with specialized companies like IBM Watson. Generally, audit firms are beginning to use AI tools to manage assertions and requests, analyze contracts, streamline inventory processes, and analyze journal entries. While large audit firms have the capital to support AI development, which smaller firms may lack, other companies, such as Mindbridge AI, have developed affordable, off-the-shelf software solutions that may be more suitable for audit firms that want to start using AI but lack the resources or desire to fully develop or customize it.

In general, it should be noted that the impact of artificial intelligence (AI) also varies depending on the type of industry or activity. AI is not a one-size-fits-all tool; rather, it is a diverse technology that can be adapted to unique environments. Industries that rely heavily on automation and utilize AI, such as manufacturing and healthcare, are better positioned to leverage the full potential of intelligent auditing. Conversely, industries lacking automation cannot reap the same benefits of intelligent auditing due to the difficulty of translating their manual processes into actionable data.

The Impact of AI on Audit Methodology: The IAASB (IAASB 2022) indicated that there are numerous challenges in using AI, both for auditors in implementing their procedures and for audited entities within their business operations. The associated risks must be identified and appropriately managed. Several assurance firms have developed methodologies that provide a framework for identifying and managing AI-related risks. In September 2021, COSO (COSO.2021) released new guidelines outlining how to apply the "COSO Framework and Principles to help implement and scale AI." These guidelines identify five areas of risk associated with AI, including:

1) Bias and reliability breakdowns due to inappropriate or unrepresentative data.
2) Inability to understand or explain the outputs of an AI model.
3) Inappropriate use of data.
4) Security vulnerabilities to malicious attacks aimed at obtaining data or manipulating the AI model.
5) Societal pressures result from the rapid implementation and transformation of AI technologies.

The guide concludes that appropriate risk management is essential to ensure that AI solutions are "reliable, proven, and effective." Consequently, AI auditing may require a different skill set than is currently applied in existing audit processes. Many companies are updating their recruitment strategies, training programs, and audit methodologies to meet the growing need for AI expertise. As Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian (2025) have noted, audit methodologies are undergoing a radical transformation. As corporate reporting becomes faster, more transparent, and more accurate, traditional auditing methods—often

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

conducted after the fact—are becoming obsolete. The future lies in continuous auditing, where AI-powered tools provide ongoing assurance and real-time insights. This means we are moving from real-time auditing to the need for continuous, real-time auditing. The speed at which financial data is generated using AI is putting pressure on auditors to keep pace with this speed and accuracy.

Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian (2025) emphasize that audit firms are already benefiting from a wide range of emerging technologies, from predictive analytics and process automation to blockchain and advanced visualization tools. However, these changes are not risk-free. Artificial intelligence (AI) can produce documents and other working papers as part of the audit process that may appear professional but lack, more importantly, the critical thinking and evaluation skills possessed only by professional accountants. Challenges such as verifying the validity and accuracy of AI-generated documents require audit methodologies to be robust enough to detect fraud and errors in increasingly algorithm-driven systems.

The impact of AI on audit methodology can be summarized as follows (Michelle Cardwell, Nadine Kater, Zaakirah Mohamed, and Bruce Vivian (2025):

1) AI and Risk Management: As businesses strive for faster and higher-quality audits, they must be aware of risks such as over-reliance on AI. In terms of reliance and bias, while updating its audit methodologies to align with artificial intelligence (AI) technologies.

2) AI and Audit Planning: When using AI for audit planning, the following should be considered:

2/1 Assess the organization's systems and controls with AI in mind: When systems are integrated and well-controlled, AI and other technologies can be easily used to analyze data. However, when systems are grouped together, and data is stored offline or requires manual processing, the effectiveness of these tools may be limited. This is often the case with sustainability data, which is frequently stored in offline documents across a variety of teams within the organization.

2/2 Bring teams together: To better understand how the IT environment impacts the audit approach, it may be beneficial to bring together two key parts of the audit team: those auditing IT and those focusing on financial statements. Collaboration between these teams will ensure a better understanding of the systems and controls, including their limitations.

2/3 Consider ways to use AI for controls vs. substantive testing: Control testing in auditing is particularly useful when dealing with large amounts of data in financial systems, and therefore one should consider how AI can be used to identify potential weaknesses in these systems or to identify anomalies in large datasets. As for substantive testing, AI can help with some documentation processes that take longer, for example, when auditing large sample sizes.

2/4 Assess the impact on timelines and resourcing needs: As data volumes increase, audits become more immediate and continuous. This necessitates considering how the shift to more

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

immediate audits will affect audit tests and timelines, as well as resource allocation. Specifically, what audit work can be performed early or immediately, and what elements cannot be brought forward, for example, one-off year-end adjustments? A continuous, well-planned, and adequately resourced audit process can alleviate pressure at the end of the audit and reduce its impact on auditors during peak times of the year.

3) Artificial Intelligence and Audit Delivery: When using artificial intelligence to deliver the audit, the following should be considered:

3.1 Think of AI as a member of the audit team: This means considering AI agents as another member of the audit team by outlining their strengths and weaknesses, defining their appropriate role in the audit plan, and, most importantly, how other members of the audit team will review their deliverables. This may include tasks suitable for AI agents, alongside human review, such as:

a. A preliminary review of the organization's control systems, highlighting potential risk areas that the audit should investigate further.

b. Data collection, extraction, and initial documentation using AI-powered robotic process automation to help prepare the initial analysis that the audit team will review. This can then be expanded to include extracting terms from lease and sale contracts, which will then be subject to further evaluation by the audit team.

c. Searching for anomalies in large datasets that might indicate fraud, or errors can be effective in highlighting potential problems with assumptions and expected credit loss models.

d. Identifying vulnerabilities in board meeting minutes using big language models employed by AI agents and identifying areas the audit team needs to explore more deeply.

3/2 Never remove humans from the audit process: AI has limitations; it can make mistakes and produce well-documented reports. However, it's crucial to remember that AI is fallible, and auditors must employ critical thinking skills and professional caution when reviewing this work, just as they would with any human work.

3/3 Understanding the Audited Entity's Use of AI: Just as auditors use AI, so do audited businesses. In fact, financial managers are now under immense pressure to use AI—not only for compliance but also for strategic business intelligence. Therefore, it's crucial to understand how they use AI in preparing their financial statements and disclosures, what tools they employ, and what controls they have over the process. This necessitates considering the meaning of AI use by businesses and its significance in audit examinations.

4) Applying AI Tools in Audit Firms: When applying AI tools, the following should be considered:

4/1 Considering whether to build or buy AI tools: There is no one-size-fits-all approach to building or buying AI tools. The appropriate methods may vary for different audit firms. Therefore, the following should be considered:

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
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4/1/1 Align audit methodology and technology teams: Technology teams in companies typically lead the process of buying or building an AI tool. These teams should not work in isolation during this process. Close collaboration with the audit methodology teams will ensure that the tool reflects the company's audit methodology, as well as the needs of the audit users. It is also important that the resources of these teams are equal. Misalignment between these teams may lead to one party falling behind or lacking resources during the process, which could result in inefficiencies.

4/1/2 Ensure sufficient data security and privacy: If the data received during the audit is commercially sensitive, it is important to understand how any AI tool will use the data and information uploaded to it, including whether it will be used to improve the AI model in the future. This should be avoided, as it puts sensitive data at risk.

4/1/3 Consider Intellectual Property (IP) Rights When Buying: Ensure it is clear who holds the intellectual property rights and whether they are a long-term partner for the audit firm.

4/1/4 Plan for a Long-Term Partnership: When purchasing an AI tool or hiring talent to develop one, it is important to plan for a long-term relationship with the supplier. AI technologies evolve rapidly, and any tool purchased or developed requires a long-term investment to improve performance and output quality. This should not be viewed as a one-time cost, but rather as an ongoing expense that should not be underestimated.

4/1/5 Invest in Broader Digital Upskilling of Staff: Auditors need basic digital skills to ensure they can use AI effectively. Proficiency in other technological areas, such as programming, advanced Excel, and Power BI, provides valuable and applicable skills.

4/2 Balancing top-down and bottom-up learning: While training staff on the proper use of AI tools in audit processes is essential to ensure high quality, it is equally important to learn from the experiences and insights of audit staff, as new auditors look to use AI in new ways, which can improve audit methodologies and procedures in the long term, and thus the need to balance with clear AI policies to promote innovation with a focus on risk management.

Results and Recommendations

Following the introductory presentation of the problem, objective, and significance of the study, previous studies, the position of the International Federation of Accountants (IFAC), and the impact of artificial intelligence (AI) on the process and methodology of auditing financial statements, and considering the development of AI technologies, the study reached several key conclusions, the most important of which are:

First: Artificial intelligence has become a national strategic necessity for various countries. The market for AI automation software is expected to witness significant growth in the coming years. With the increasing importance and use of AI, auditors must evolve at an accelerated pace to address a variety of new challenges that have not yet been fully explored. In anticipation of this growth, standards organizations, such as the US National Standards Organization (ISO/IEC

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

JTC 1/SC 42), the National Institute of Standards and Technology (NIST) (EO 13859), and the UK Information Commissioner's Office (ICO), have begun developing frameworks and standards for AI. These different standard-setting bodies are developing in specific areas of focus, such as data privacy, ethical use, and the technical design of AI systems.

Second: Surprisingly, the American Institute of Certified Public Accountants (AICPA), the body responsible for setting standards for public accounting firms in America, and the International Auditing and Assurance Standards Board (IASB) have not yet established formal professional standards to guide auditors in using and auditing artificial intelligence (AI) systems. This leaves auditors without sufficient guidance on critical issues related to data privacy, ethical standards in AI audits, and audit risks during the implementation and production of AI systems (Harvard Law School Forum on Corporate Governance, 2025; The Financial Brand, 2017; Business Today, 2018).

Third: proposals from chartered accountants have called for a formal approach to risks and ethical standards, including algorithmic bias, data management, and privacy issues in audits (PICPA 2024), and have prepared white papers on the subject. However, existing articles are guidance-based, open to interpretation, and do not guarantee critical safeguards due to the potential for "black box" results that lack traceability and accountability in cases of failure or fraud. Consequently, auditing organizations, most notably the International Federation of Accountants (IFAC), the global representative body for the profession, and audit professionals, have been urged to develop their own frameworks for auditing AI systems.

Fourth: Artificial intelligence has become a common term used to describe even the simplest forms of automation. However, it is important to understand the differences between them, as each level of automation plays a valuable role, but each type has its own specific uses. Robotic Process Automation (RPA) is considered the lowest level of automation because it follows strict rules. When programmed correctly, it performs repetitive tasks such as automating accounting workflows, data collection, and transferring information automatically without human intervention. Therefore, audit firms have begun integrating one or more levels of intelligent automation to achieve higher performance and operational efficiency (Hackernoon, 2019; The CPA Journal, 2018).

Based on the above, the study suggests the following recommendations and future research:

First: with the increasing prevalence of AI applications in client environments, methodological redesign for auditors has become essential. Auditors are increasingly tasked with evaluating not only financial statements but also the integrity of the AI systems that generate those statements. This necessitates a fundamental redesign of audit methodologies. The growing use of "last-stage automation tools," such as automated disclosure checklists and AI-powered IFRS compliance tools, raises complex questions about professional judgment and accountability.

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

Therefore, judgment must remain human. The challenge lies in ensuring that auditors do not simply accept what AI presents to them.

Second: in addition to technical skills, auditors must develop professional and ethical competencies, such as critical thinking, communication, collaboration, professional judgment, and professional caution. This will enable them to critically evaluate and review AI outputs. Further complicating the landscape is the increasing number of sustainability, environmental, social, and governance (ESG) reports, which are often managed outside of traditional financial systems.

Third: Auditors must now adapt their methodologies to evaluate new, unstructured data flows with the same rigor they apply to traditional financial systems. This necessitates significant investment in artificial intelligence (AI) tools and human resources, while also considering the time and cost involved.

Fourth: As AI technologies evolve, auditors need to continuously monitor and adapt their use to ensure high-quality audit processes. Among the key areas where audit firms and auditors must stay abreast of the latest developments are:

4.1 The need to develop International Standards for Auditing (ISAs). The International Auditing and Assurance Standards Board (IAASB) has issued International Standards on Auditing (ISAs) based on fundamental principles that allow for the use of automated tools and techniques (ATTs), including AI. Accordingly, the IAASB has issued a new technical position guiding its approach to technology and auditing, proactively considering the appropriate use of technology in auditing and assurance. Audit firms must remain informed about the developments of this project, which has already launched a new initiative on technology and quality management.

4/2 The need for a regulatory response: Audit firms are concerned that regulators may restrict the use of artificial intelligence or hinder innovative audit methodologies. Therefore, striking the right balance between quality and innovation is essential to allowing practices to evolve in this area.

4/3 Technology convergence: AI tools are likely to soon interact with other technologies, such as blockchain. Auditors should begin examining the potential future implications for their audit methodologies.

4/4 Impact on audit fees: With significant technological investment, audit firms will need to consider the impact on the traditional audit fee model, which is based on employee hours. Transparency with management teams at audited organizations will be crucial, as they may expect that audit efficiency will translate into lower fees.

4/5 Increased risk of fraud: While AI technology can be useful in identifying anomalies and fraudulent balances, it can also increase the risk of fraudulent invoicing resulting from AI and inaccurate audit evidence. Therefore, as AI technology and audit practices evolve, auditors need to develop methods to obtain safeguards against these types of risks.

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

4/6 Changing user needs: As investors and other stakeholders use AI to interpret and analyze annual reports and accounts, auditors need to consider what this may mean for audit methodologies, particularly the future relevance of auditing.
4/7 While AI offers tremendous opportunities to improve audit quality and efficiency, firms must proactively update their methodologies, risk assessment models, and frameworks. The profession must also ensure that AI remains a tool to support, not replace, due diligence and ethical professional judgment.
4/8 Audit regulators and standard-setters – such as the International Auditing and Assurance Standards Board (IAASB) and the International Institute of Auditors (IRBA) – should already be updating standards to guide firms through this transformation. It is time for firms, large and small, to embrace this technological shift with strategic planning and careful innovation, enabling auditors to effectively plan and implement AI and use it to improve the quality and efficiency of the audit process and methodology.
4/9 An auditor must be "...tech-savvy, a strategic thinker, and possess strong communication skills." Even with artificial intelligence, there remains a continued need for deep knowledge and experience in traditional auditing areas.
4/10 Auditors need to adapt to their changing environment. For accounting students aspiring to enter the field, it is advisable to add a focus on technology and analytics to their accounting fundamentals to become ideal candidates for the profession. For current professionals, continuing education to acquire knowledge and understanding of emerging technologies, while expanding critical thinking and analytical skills, helps them remain competitive as the auditing field undergoes rapid changes due to developments in artificial intelligence. The human element needs to adapt to these demands (Pascal A. Bizarro, Emily Crum, and Jake Nix, 2019; Guthrie, R., 2017).

Fifth: Audit firms must work with senior executives and boards of directors to develop ethical standards and governance models for the use of artificial intelligence (AI). AI requires clarity in data privacy functions and policies, data governance, supplier management, human resources, compliance, cybersecurity, and risk management. Cross-functional teams of audit and business leaders may be required to develop new operating models that formally establish audit assurance for each affected area of the business.

Sixth: Accounting and auditing practitioners must strive to research and become thought leaders in the future of their professions and transfer this specialized knowledge to senior leadership. These professionals have a role in ensuring that their organizations are innovative and AI-independent to provide the best possible services to clients. Furthermore, professional organizations have an even greater role in developing and adapting the standards used in professional practice to keep pace with these global developments and changes.

Following the advanced presentation, the current study proposes for researchers and academics to study the impact of the use of artificial intelligence on professional ethics, the extent

International Journal of Accounting and Management Scienc
Vol.5 No.1, Jan. 2026
Print ISSN: 2834-8923 Online ISSN: 2832-8175
DOI: https://doi.org/10.56830/IJNZ1133

to which the management of joint-stock companies accept the use of artificial intelligence in auditing work, the extent to which practitioners of the profession respond to the use of artificial intelligence in auditing work, the extent to which the use of artificial intelligence in accounting and auditing work is appropriate in the Arab environment, the extent to which practitioners of the auditing profession are aware of the impact of artificial intelligence on the auditing of financial statements of joint-stock companies and small and medium-sized enterprises, the extent to which practitioners of the auditing profession are aware of the impact of artificial intelligence on the audit methodology in joint-stock companies and small and medium-sized enterprises, and the extent to which audit committees are aware of the impact of artificial intelligence on auditing practices and auditors.

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