

# The Impact of Emerging Technology on the Role of Auditors in Reshaping the Future of Audit

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**Abstract:** *Emerging technologies have the potential to enhance business operations, and the audit profession today faces a range of challenges that audit firms, as business entities, can address. This research evaluates the impact of emerging technologies, such as blockchain, big data, and machine learning, on auditing methods and processes, examining how auditors may adapt to an evolving landscape. Through semi-structured interviews and a qualitative approach, this study provides an in-depth analysis of the effects of contemporary technologies on the audit profession. The findings offer valuable insights into the opportunities and challenges auditors face in an era of rapid technological advancement, along with recommendations for the future direction of the audit profession. The study also explores the expectations gap and the role of technology in bridging this gap. The results align with existing literature, revealing that integrating new technologies into auditing enhances effectiveness and efficiency. Consequently, auditors must broaden their skill sets and adapt to an ever-changing environment to remain competitive despite ongoing technological advancements.*

**Keywords:** audit efficiency, artificial intelligence, emerging technologies, audit quality.

## INTRODUCTION

Auditing has long been a cornerstone of the business world, offering independent assurance regarding the accuracy and reliability of financial statements (Kueppers et. al., 2010; Ding, 2023). Over the years, the profession has evolved significantly, with practitioners embracing innovative approaches to improve audit effectiveness. The rapid advancement of technology has profoundly disrupted the audit landscape, compelling auditors to adapt to new methodologies and transform their traditional practices.

By the end of the 20th century, the accounting and auditing industry had encountered a radical technological transformation (Cong et. al., 2018), shifting from manual and hefty approaches to digital solutions. The emergence of accounting and audit management software and computing protocols alongside the vast potential of AI has resulted in accelerating the work pace in this paradigm, encouraging collaboration and communication amongst auditors. In the current day setting, an accountant could undertake a more efficient statistical accounting or forecasting study using a computer system (Kruglinski, 2009).

This technology enables auditors to plan their work, monitor performance, and ensure compliance with regulations and legal norms (Vitali and Giuliani, 2024). This revolution has indubitably diminished concerns like margin for human error, fairness of financial statements, risk of incorrect input, and so forth, alleviating the audit environment's intricacies, automating monotonous tasks and assisting with examining financial and operational data for abnormalities. For instance, various auditing software uses the effectiveness of deep learning algorithms to identify financial misconduct and fraud (Özbaltan, 2024).

Incorporating new developing technology represents a promising transformation in the future of accounting and auditing. The primary focus areas are data analytics, blockchain, automation, AI, and machine learning (Accounting Today, 2017). Enterprise resource planning (ERP) systems are among the vital IT endeavours impacting the accounting industry over the past ten years. They are designed to combine all divisions' operations and units into a single computer system capable of meeting each unit's needs (Kanellou and Spathis, 2013; Ogechi, 2018). According to Neamah and Hassan (2019), implementing continuous auditing techniques in firms that use ERP systems offers a suitable environment for effective and efficient corporate control and aids in developing a competitive advantage by supplying pertinent, accurate, and timely information.

Artificial intelligence studies, robotic process automation, and data analytics offer substantial opportunities for businesses seeking more reliable and efficient audit procedures. In the case of Blockchain technologies, innovative audit techniques enable smart contracts and automated audit processes that improve audit operations' efficiency and results. To find Blockchain solutions, for instance, international corporations work with research institutes like Deloitte's Blockchain laboratories in New York, Dublin, and Hong Kong (Zhang et al., 2020).

A prediction by the World Economic Forum in 2015 anticipated that by 2025, AI would conduct 30% of audits. Integrating AI in the auditing landscape will enhance the precision of accounting data, lower the probability of fraud, and encourage advancements in accepted accounting and auditing procedures. For instance, PwC has its own AI audit lab to enhance

audit quality, automation levels, and efficacy. It takes advantage of AI technology's ability to collect large amounts of data and perform accurate analyses. GL.ai uses ML technology to integrate PwC's global skills and knowledge, enabling it to behave like an experienced auditor. (PwC, 2019).

Despite limited resources and time (Persellin et al., 2019), numerous audit firms have attempted to adopt emerging technology in order to improve audit quality and efficiency. This is due to the profession's audit pressure to lower audit fees (Asthana et al., 2019) while raising service quality (Botic, 2018; Harris, 2016). Because of this, audit firms, especially the well-known "Big-4", have committed many resources to creating and incorporating cutting-edge technology into their audit operations.

Attributed to these technological advancements, the role of auditors has been transformed to a great extent; big data analytics is a prime example of this aspect. The usage of big data analytics has made significant improvements by allowing auditors to quickly and precisely access and analyse vast amounts of data, as well as see patterns and trends that they might have missed otherwise, allowing them to spot potential risk areas and enhance their decision-making procedures.

However, it must be noted that the accounting and auditing sector is anticipated to be enhanced by Technology rather than entirely automated (Davenport and Kirby, 2016) since AI technologies replace specific duties but not entire jobs as AI cannot replace professional judgement (Dorian, 2017). Thus, AI-enabled technologies can locate relevant data, extract it from papers, make it easily accessible, and automate repetitive procedures, giving lead auditors plenty of time to focus on activities that require higher-level judgement (Abdolmohammadi and Usoff, 2001).

Considering these advancements for immediate anomaly detection and identification of intricate patterns across massive amounts of data, future audits would entail procuring relevant data analysis tools based on contemporary technologies. Moreover, electronic data interchange and the need for automated audit trails will soon supplant manual audit trails, making the latter a more crucial source of evidence (Shaikh et al., 2018) and way of improving auditor performance (Spence, 2020).

The research implies that technology has a substantial impact on the functions of the auditor. Using current techniques allows for functioning with efficacy. However, it points out serious questions about the future of the profession and the competence of skilful auditors to remain relevant. The literature that is currently available suggests that if auditors adjust to technological advancements, they could enhance audit quality, increase efficiency, and result in cost savings. There are still problems with technology use in the

audit process, particularly regarding privacy and data security. Therefore, auditors must stay abreast of technological advancements and possess the necessary skills to enhance audit quality.

### **Research Aims and Objectives**

This study examines auditors' roles in the digital age and how they shape the profession's future. The increased usage of modern technology has drastically altered how auditors work, and their conventional responsibilities are rapidly evolving. Furthermore, it explores potential future developments in the field, the benefits and limitations of technology for auditors, and ways it can be leveraged to enhance their effectiveness and efficiency in auditing. Additionally, this study will investigate how the ongoing advancement of technology impacts the overall trajectory and prospects of the auditing industry, shedding light on how technology is changing the audit industry and what this means going forward for auditors. The primary aims of the current investigation are:

- 1) *Analysing how technology and auditing will interact in the future.*
- 2) *Assessing the impact of technology on the audit process, developing roles, and the profession's future.*

### **LITERATURE REVIEW**

The body of literature is enriched with distinct auditing aspects and the evolving dynamics of auditing protocols. For example, Porter (1993) researched the audit expectations gap. It can be defined as the discrepancy between auditors' perceived performance and society's expectations. When the general public feels that auditors have not sufficiently fulfilled their responsibilities, there is an expectation gap. The public believes that an auditor's knowledge can prevent fraud and errors that may harm account users, yet auditors believe their work is clearly defined by legislation (Olojede et al., 2020). Public trust is the 'heartbeat of any profession', and when confidence is gone, the profession suffers in credibility. A timely reminder to the accounting profession was provided by the prosecution of Arthur Anderson in the Enron case, which exposed the judiciary's ability to interpret what constitutes auditor negligence. According to (Best et. al., 2001), auditing needs to respond faster to public expectations to stay relevant.

In order to address significant issues or develop strategic goals, managers should consider the firm's interactions with different stakeholders (e.g., employees, suppliers, and clients) according to stakeholder theory (Parmar et al., 2010). The idea that a company has only

shareholders to answer to is called into question by this thesis. To establish trust in reporting assurance, providers must build close connections with stakeholders and understand their difficulties (Henriques, 2003). Because updating an assurance statement for a particular stakeholder may impact whether the information is material, it is imperative to identify key stakeholders. Because updating an assurance statement for a particular stakeholder may impact whether the information is material, it is imperative to identify key stakeholders.

Conversely, agency theory places a premium on protecting the interests of shareholders. The agency dilemma arises from expectations that are not met in terms of the interests of their shareholders. Auditors are expected to review the financial statements that are provided to them. Even though auditing is crucial, defining the duties of auditors has never been easy. This issue causes a perception gap between users and auditors since shareholders' expectations of auditors differ from their actual performance (Alleyne and Howard, 2005). The financial crises involving large companies like Enron and WorldCom have worsened the perception gap.

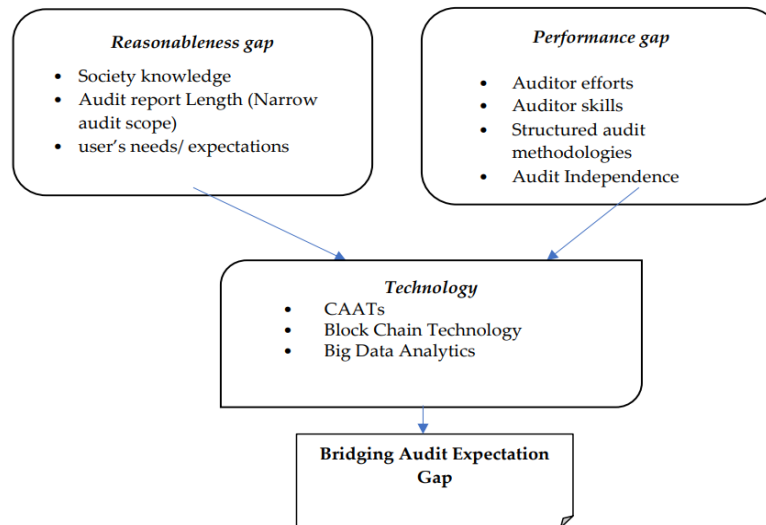
On the other hand, the agency theory assumes the principals' and agents' different levels of knowledge. Put differently, shareholders are less informed about the financial performance of the company. The IASB's concept of financial reporting demonstrates how shareholders utilise financial information to make decisions. Users consume financial data, and external auditors confirm its accuracy (Bushman et al., 2004). To put it briefly, auditors guarantee stakeholders the accuracy of financial statements. One way to understand the need for auditing is to lessen principal-agent conflicts and information asymmetry. As a result, relatively new accounting information systems reduce information asymmetry, which may also impact auditors (Healy & Palepu, 2001).

### **The Role of Technology in Bridging the Gap**

Modern technologies minimise the gap between performance and expectations by accurately and efficiently processing large amounts of data. This allows auditors to spot fraud or mistakes in financial accounts, resulting in higher-quality audits since the auditors can focus on challenging, high-risk areas. By obtaining training and education in statistical methodologies and data analysis, auditors can gain a more profound understanding of machine learning to narrow the expectations gap. CAAT (Computer-Assisted Audit Techniques) allows auditors to check data files and complete assessments with enhanced evidence and less risk. Adopting CAATs speeds up and improves the audit process, potentially minimising the gap between performance audit expectations (G. Kamau, 2022). Big data and artificial intelligence are currently the most prevalent technologies in the auditing process (Montes & Goertzel, 2019). By increasing the quality of audit

evidence, data analytics can enhance audits by enabling auditors to assess the entire transaction population. For instance, auditors can use BDA to assess high-risk areas, like cash transactions, to look for unusual activity and ensure that laws against money laundering are followed. This strengthens internal controls (Brown-Liburd et. al., 2015). Because of this, auditors have a higher chance of spotting fraud if they perform data analytics on every transaction and look for unusual patterns that might point to fraud.

Furthermore, artificial intelligence (AI) systems have enabled the detection of possibly fraudulent transactions. For example, AI approaches make it easier to identify atypically high sales figures reported before the fiscal year's end or atypically high payment figures made following the fiscal year's conclusion (Rapoport, 2016). AI can also predict financial performance by looking at historical financial data while highlighting hazards that warrant further examination. This allows auditors to focus on regions with problems, lowering the likelihood of significant misstatements in financial accounts.



**Fig. 1.** Framework for bridging the audit expectations gap.

Over the previous decade, technology has influenced various industries and professions, including auditing. Auditing involves reviewing and scrutinising financial statements and other essential information to guarantee accuracy and conformity with accounting rules. Large ERP systems and accounting software have gradually integrated corporate accounting functions. Nevertheless, auditors frequently use software from various sources for verification, record-keeping, and extrapolation. Depending on the engagement, these

tasks typically involve a lot of repetition and manual labour (Rozario & Thomas, 2019). Technological advancements significantly impact auditors' work and help them find new opportunities to assist their clients.

The analytical method auditors use is the process of extracting meaning from various types of electronic data, also called audit data analytics. (Murphy and Tysiac, 2015). ADA-related technology includes databases, generalised auditing software, and spreadsheets. When conducting an audit, accountants primarily use these technologies. These tools can be used to effortlessly repeat the same study with minimal modifications because they efficiently provide analytical and statistical functions to handle large data sets. When data analytics is integrated with conventional auditing techniques, auditors will have a deeper comprehension of their clients than previously (Murphy et al., 2015).

The idea that technology developed by humans is thinking, learning, and making decisions independently is so fantastic that it has persisted for a long time. AI has the power to change the auditing industry. Qasim and Kharbat (2020) examined how artificial intelligence might transform the auditing industry. AI can assist in automating routine processes such as document review, data input, and data collection, freeing auditors' time for time-consuming tasks. AI can also provide features like natural language processing and machine learning to detect anomalies more precisely (Qasim & Kharbat, 2020).

A blockchain records transactions between network participants. It is an Internet-based distributed ledger that has recorded every transaction since its inception (CPA Canada, 2020). Blockchain in accounting has vast potential applications. Anything is possible, from expediting regulatory compliance to enhancing the widely utilised double-entry accounting. Blockchain technology also includes smart contracts and software programmes that can only operate in specified circumstances. An invoice, for instance, becomes self-sufficient once it is verified that the supplied items have been received and meet specifications and that sufficient funds are in the business's bank account (Deloitte, 2016).

Auditors must comprehend the value of developing technologies and the skill sets necessary to create a new, increasingly automated, intelligent audit that can offer clients improved audit services. These days, altering how businesses operate is just as important as investing in new technologies to increase productivity and efficiency. The audit and assurance framework serves as the foundation for this amazing transformation. The auditing process is evolving, and firms that take advantage of these fascinating developments will see improvements in performance, audit evidence quality, and stakeholder value. The overall value of their work will be of more significant concern to auditors in the future due to global disruptive breakthroughs such as artificial intelligence (AI).

After investing in and implementing new technologies, clients seek broader assurance services, looking beyond the focus on historical data to mitigate risks in their organisations. Instead of evaluating a small sample size, modern technology allows you to test the entire population of entries. The transactions are more precise and accurate, with better evidence of control concerns. Human judgment is becoming more digitised and improved in the age of machine learning and artificial intelligence; RPA is already used in audit execution for repetitive tasks such as revenue and payroll testing.

The International Accounting Bulletin has held the annual Digital Accountancy Forum and Awards (DAFA) since 2012. Table 1 shows that Deloitte and PwC have been recognised by the Digital Accountancy Forum as the "Audit Innovation of the Year" winners for the past seven years, demonstrating the Big Four's interest in innovative technology. Because of the intense competition and the advantages of utilising these technologies, these businesses will employ more automation in the upcoming years.

**Table 1.** DAFA – Audit Innovation of the Year

<b>Year</b>	<b>Award Winner</b>	<b>Digital Innovation</b>
<b>2015</b>	Deloitte	Argus
<b>2016</b>	PwC	Halo
<b>2017</b>	PwC	GL.ai
<b>2018</b>	Deloitte	Cortex
<b>2019</b>	PwC	Cash.ai
<b>2020</b>	Deloitte	Omnia DNAV
<b>2021</b>	Deloitte	Omnia's Trustworthy AI Module
<b>2022</b>	Deloitte	Omnia ESG Module

*Source: International Accounting Bulletin at the Digital Accountancy Forum and Awards*

The Big Four lead the way in using and adopting computer-related audit procedures among large international, national, and smaller enterprises. This disparity stems mainly from a lack of financial and human resources. Smaller accounting firms face an obstacle to entry due to the difference in financial resources between large and small firms. The companies' limited financial resources prevent them from keeping up with their clientele, which causes them to lose business to companies that can (Oldhouser, 2016).

## **METHODOLOGY**

### **Research Design**

Considering the study's nature and scope, a qualitative exploratory research design has been adopted to capture the impact of modern technology on auditors' responsibilities and question the future of their profession from an auditor's viewpoint.

### **Data Collection**

This study has incorporated a primary data collection approach. The data was collected via semi-structured interviews since this design facilitates an in-depth insight into respondents' experiences, attitudes, and standpoints on a specific topic.

### **Interviews**

The exploratory nature of this research was assisted by open-ended, scripted semi-structured interviews (Appendix A). Eleven interviews were conducted, each lasting 30 minutes. The sessions began with a general conversation before moving on to focused questions to eliminate potential bias. To prevent inaccuracies, the interviews were verbatim transcribed for analysis after being audio recorded.

### **Participants**

The sample population was chosen using a convenience sampling technique. Each firm's contact person was in high management. Auditors with 10-12 years of expertise in the audit sector and familiarity with audit technologies were chosen for interviews. The survey included 11 experienced experts from the Big Four, banks, and second-class accounting firms. Three accounting and finance professors with ACCA and CPA certifications and significant business experience are also on the roster.

Through the author's professional network on LinkedIn, the sample participants were contacted and given an email explaining the nature of the research. The research aims and objectives were clearly communicated to the participants via an information sheet prior to the research's conduct. Each participant was informed regarding voluntary participation, and written consent was obtained. In terms of ethical standards, confidentiality of the respondents was maintained throughout the study, and all identifying information was kept anonymous while reporting the findings.

**Table 2. Respondents Interviewed**

<b>Respondents</b>	<b>Years of Experience Within the Industry</b>	<b>Position</b>	<b>Date of Interview</b>
<b>Interviewee 1</b>	10 years	Internal Audit Manager	24/2/2023
<b>Interviewee 2</b>	7 years	Senior Manager, Audit and Assurance	2/03/2023
<b>Interviewee 3</b>	17 years	Internal Audit Manager	3/03/2023
<b>Interviewee 4</b>	15 years	Audit Senior Manager	12/03/2023
<b>Interviewee 5</b>	21 years	Partner of Audit and Tax Services	21/03/2023
<b>Interviewee 6</b>	6 years	Assistant Manager, Audit and Advisory	20/03/2023
<b>Interviewee 7</b>	24 years	Former Senior Manager	22/03/2023
<b>Interviewee 8</b>	5 years	Former Senior Associate	23/03/2023
<b>Interviewee 9</b>	4 years	Former Financial Accountant	25/03/2023
<b>Interviewee 10</b>	5 years	Assistant Manager, IT Audit	27/03/2023
<b>Interviewee 11</b>	25 years	Partner of Assurance Services	30/03/2023

## **FINDINGS**

To connect the gathered data with previous literature, a thematic analysis of the findings was conducted to better understand how evolving technologies will affect the function and prospects of auditors. The data was first summarised and transcribed to identify the prime aspects emerging from the interview responses, which were later categorised and interpreted under relevant themes. Below are summaries of the data findings for each question, accompanied by statements attesting to the validity of the findings.

### **Impact of Modern Technologies on Traditional Audit Practices**

The conventional role of the auditor has changed due to technological advancements. For instance, it used to be believed that gathering and analysing vast amounts of data was a challenging undertaking. However, the advancement of technology has changed this. As Respondent-1 has mentioned, "Data is the greatest wealth we, as auditors, can have. Without data, we will not have evidence. An auditor's work is based on evidence; we need access to the data to have that. " Every respondent affirmed this idea.

The 7<sup>th</sup> respondent provided more evidence: *"Previously, tasks performed manually are now done by the system. Twenty years ago, the same audit process that is now automated would take days on end."*

These quotations suggest that the traditional role of an auditor has benefited from emerging technologies. Every response exhibited how enhanced access and data analysis led to a

more risk-focused audit procedure, enabling auditors to prioritise the client's most urgent concerns. Consequently, the auditor can now concentrate on the key facets of the client's business. The respondents' current tools included SAP, Oracle, Spectrum, and CAATs. While most responders supported the shift in conventional roles, some disagreed.

*"The auditing profession is sensitive. It complies with society as a third party, which puts the profession under the public radar." (Respondent 9)*

*"The main notion has changed because of technology – the idea of trusting experts. The auditing profession is based on the idea of trust. Clients require auditors to review the financial statements to ensure their financials are correct. Clients now have direct access to corporations, and they do not value and fully trust the role of auditors." (Respondent 8)*

The quotations state that although technological advancements have enhanced the effectiveness and success of auditing, auditors now face the challenge of demonstrating to the public that human judgment remains a crucial element for auditing to be genuinely effective.

### **Impact of Technology on Collaboration with Clientele**

Strong communication and tool collaboration may provide opportunities for audit improvement. Every respondent acknowledged that cloud computing has simplified data access and customer interaction. Respondent-4 confirmed that when access to other databases is granted, data from one database can be combined with data from other databases to enable more effective risk analysis:

*"The exchange of data and information used in audits is now done through an online collaboration tool, eliminating the tedious way of sharing information in a traditional audit."*

In addition, Respondent-3 mentioned: *"Currently, with all businesses heading to automation, Internal audit modules and software are embedded in ERP systems (i.e., SAP & Oracle), which increases the ability to detect nonconformities and be able to report on them and drive management to take the necessary actions or mitigate them."*

### **Modern Technology and Adapting to Challenges**

Every respondent mentioned two main issues. First, they are familiar with the client's program and know how to use it. Respondent-2 first brought attention to this issue and shared their experience: *"We have faced difficulty using client software to extract data in a particular format due to a lack of knowledge and training. Aligning with the client on*

*such matters is crucial so the engagement team receives the right data form."*

*"Audit team members and clients must understand the tools used and the reason behind the usage. Prior knowledge is crucial because if members are unaware of the tools, it will hinder the entire audit process."* (Respondent-9)

It was decided that the only way to overcome this obstacle is for businesses to begin training employees and enlisting auditors as soon as they use the tool. Second, there are increasing challenges to using technology. Respondent-10 stated, *"It is becoming a challenge to maintain data integrity and regulatory compliance, even after all the necessary controls are in place."* *"Auditors need to keep an eye out for data manipulation and IT risks, as data sets can be easily manipulated."*

It has been recognised that substantial volumes of data, including sensitive client information, are essential for AI and data analytics. This raises significant privacy and data security concerns, especially considering recent high-profile data breaches.

### **Audit Processes' Effectiveness and Efficiency**

Computer-assisted auditing techniques (CAAT) have greatly enhanced the effectiveness and efficiency of the process. According to respondents, automation has made it possible to extract and analyse data more quickly, identify patterns and abnormalities more precisely, and automate repetitive tasks, all of which have reduced time spent and enhanced the calibre of audits. Respondent-4 said: *"Having a targeted approach when selecting samples, thereby having a risk-driven approach in the audit. It also improves the quality of data available to auditors, improving the efficiency and the audit process."*

*"Modern technology saves plenty of time and resources, improves the quality of audit work, and increases the value of audit services for clients,"* Respondent-5 added.

### **Fraud and Financial Irregularities Identification**

In contemporary practices, auditors leverage data analytics technologies to identify potential concerns by detecting patterns and irregularities in financial transactions. Machine learning algorithms and artificial intelligence are employed to analyse databases, uncovering anomalous activities and conserving time and effort that would otherwise be spent on manual inspection. According to Respondent-2's input: *"Automation has given us insights into certain material account balances in the financial stats, primarily to be able to identify outliers as part of analytics procedures that we perform, which resulted in a material misstatement. E.g., trend analysis."*

Respondent-4 agreed with this notion: *"CAATs have increased the audit coverage from the traditional haphazard or random sampling to a data analytics-driven sampling which is more risk-focused and thereby has a higher chance of detecting fraud and other irregularities."*

Respondent-8 made a noteworthy observation regarding public trust, even though all respondents agreed with the above ideas: *"The idea towards audits is that they provide reassurance towards numbers, and due to fraud and ethical concerns, the world of auditors has been shunned. The idea of being an expert that clients want to go to finalise and add a "trust seal" on their financial statements has strengthened due to technology assisting auditors in fraud detection. Auditors now have enough time to focus on analysing the data and spotting irregularities, allowing the public's trust to be in good hands."*

The quotations imply that technological advancements may serve as the primary catalyst for restoring public trust, ultimately benefiting clients and narrowing the audit expectations gap.

### **Emerging Technology and Emerging Concerns**

All respondents concurred that integrating new technology into an organisation raises ethical questions. Everyone raised two main concerns: confidentiality and cybersecurity. Respondent-7 stated: *"The risk of cybersecurity has increased, meaning a greater threat of data theft and loss of data integrity. Auditors must be more familiar with the tools being used, test applications and controls at wider scales and more intensively than before since the client also relies on the same technology."*

Furthermore, Respondent-1 referred: *"As auditors, we have taken an oath to keep client data confidential, and since we have access to much data, we must be careful. Ethics will not be a major issue if objectivity and independence are maintained. We must access data independently to avoid manipulation or data leakages."* It was concluded that ethical conduct in auditing is, at its core, a matter of personal responsibility. Irrespective of changes in the professional environment or technological advancements, the onus remains on the individual to consistently maintain and uphold their ethical principles.

### **The Ever-Evolving Role of an Auditor**

Almost all the respondents agreed that an auditor's job will probably grow more intricate and multifaceted as technology develops. Respondent-7 emphasised: *"A new skill set will be acquired from those currently joining the workforce. Existing auditors must be trained in emerging technology, resulting in desirable outputs and enhanced audit quality. The*

*bottom line is how the new applications are designed to serve the purpose. Eventually, the purpose is to give an opinion on the financial statements."*

It also stressed the importance of auditors' knowledge of contemporary technology. Respondent-10 stated, *"Auditors need to be updated with the new technologies, not just the IFRS and the ISAs. We need to know how technology impacts the audit and the financial reporting process. It will not just be the job of specialists and IT auditors; it will be equally important for financial auditors as they ultimately are responsible for the engagement."*

Respondent-8 discussed the uncertainty surrounding the role's future as digitisation keeps happening: *"One side suggests that technology can take over all the mundane tasks, allowing auditors to do tasks with critical planning which require human judgment. The other side suggests AI is a revolutionary technology, just like smartphones were, and we do not fully know the capacity of this technology. This evolution may even take the critical thinking from the equation, and we would be left with software with access to so much data, producing results close to what a human would do."*

### **Emerging Technology's Effect on the Profession's Future**

The last query concerned the profession's future. The respondents agreed that auditing is one of the few industries where technology will only help the profession.

*"The need for an audit and human scepticism will always remain. The dynamics will change, and the audits will become more digitalised, enabling auditors to deliver efficiently. It is all about embracing the change to get the benefits out of it."* (Respondent-5)

An understanding of contemporary technology is crucial to the auditors' audit process. It will be necessary given that audits will soon become even more digitally oriented. Respondent-4 said: *"There would be expectations from audit clients to demand more technology-driven change from the auditing profession. Traditional auditors will need to upskill to keep up with these expectations. I believe future audits will be more efficient, and time spent on the process will significantly reduce."*

In addition, Respondent-7 discussed the anticipated changes in audit practices in the coming years: *"As has been seen historically, auditors have always adapted to technology. The profession's future will change, and the trainee auditors will have to be equipped with new skills. Risk assessments will change as they will have to be done in additional areas apart from the business, such as risk assessment of the client's technology, which will have more emphasis."*

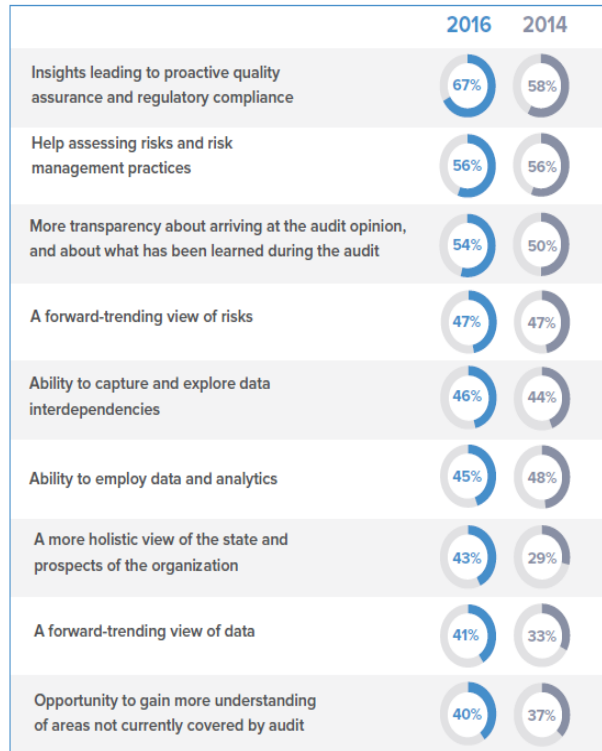
The quotations imply that while the nature of the profession may evolve, human judgment and scepticism will remain indispensable. Auditors must adapt to the changing landscape, and this transformation should be embraced.

## **DISCUSSION**

The research findings support the notion that technological advancements have profoundly impacted the role of auditors and are shaping the profession's future in a positive direction. However, it is evident that despite these technological advancements, auditors will continue to play a pivotal role in ensuring the accuracy and reliability of financial statements. The data indicates a significant rise in the digitalisation of auditing processes. Automation efficiently handles mundane and repetitive tasks, enabling auditors to concentrate on more intricate and value-driven responsibilities.

The findings are congruent with existing literature on the subject. Auditors must devote significant time to conducting the necessary tests when larger datasets are evaluated using conventional methods. According to Alles (2015), big data analytics could assist accountants in cutting audit-related costs and improving audit effectiveness.

Furthermore, as responses revealed, clients need their auditors to be up to speed and knowledgeable about the advancement of current technology to deliver in-depth audits, value-added insights, and trend analysis. According to ICAEW research, auditors must stay on top of these developments in order to provide relevant advice and assistance. Audit companies are collaborating with a wide range of technological expertise in response to these changes. Referring to DFSA and ICAEW (2017), these initiatives spanning multiple technologies will equip them with the necessary tools to expand the scope of their assurance services, tackle emerging technology risks for their clientele, and safeguard their digital assets. This was also proved in a KPMG and Forbes study conducted in 2017.



**Fig. 2.** Clients seek more forward-looking auditors (KPMG and Forbes, 2017).

Moreover, respondents expressed concerns about the difficulties professionals encounter in the field as technology continues to evolve. The two most pressing issues identified were understanding client systems and the risks inherent in modern technological advancements. Companies are particularly worried about data loss management, which is significantly increasing the demand for cybersecurity services. To meet these new requirements, professional service providers must identify changing risks and offer innovative services and solutions (DFSA and ICAEW, 2017). Moreover, the interdependence of electronic systems can present a significant challenge for auditors seeking to adopt modern technologies and potentially accelerate the audit process. For instance, organisations utilising SAP to manage their operations and store critical data require a comprehensive understanding of the software to analyse the information it contains effectively.

The respondents underscored the enduring significance of human scepticism and judgment. However, in order to broaden the scope of their services, auditors must first acquire a comprehensive understanding of the methods used to improve audit efficiency and

effectiveness. This aligns with previous research, which indicates that various human capital resources, such as specialised technology skills, professional skills like leadership and communication, and expert accounting and auditing skills, are needed (DFSA & ICAEW, 2017). Information technology (IT) may impact the audit of a client's financial statements. This includes how the client gathers, evaluates, and presents data in its financial statements and how technology may facilitate the audit procedure. Auditors need to be fully aware of these potential effects. (Global ACCA, 2021).

In conclusion, the empirical findings derived from our source data and the existing literature align consistently. Despite the associated risks and challenges, the study suggests that technological advancements will benefit the field. The current literature substantiates the respondents' assertion, providing a solid foundation for their arguments. This study adds to the growing body of research regarding the impact of modern technology on the roles of auditors and the future of the auditing profession.

## CONCLUSION

The auditing profession is continually evolving, driven primarily by technological advancements that have transformed the nature of work and task execution. The integration of automation, artificial intelligence, data analytics, and blockchain technology has significantly enhanced the field of auditing. While these changes may present challenges for auditors, they also create opportunities to elevate the quality and efficiency of audits.

The focus of auditing is rapidly shifting from traditional reporting to advanced analytics. New recruits are increasingly becoming a significant part of the workforce. The findings indicate that the optimal balance will be attained by integrating technical expertise in accounting and auditing with a solid understanding of technology and digital competencies. Audit firms must hire IT specialists as business processes become more dependent on technology. Auditors must deeply understand these intricate networks as clients transition towards fully integrated systems. Companies are, and will continue to, seek candidates with a well-rounded skill set that combines these attributes with an accounting degree and strong interpersonal abilities (McCabe, 2015).

Clients will increasingly expect the capabilities offered by technology-enabled audits, a trend supported by current research findings and existing literature. Data visualisations in audits will no longer demand specialised expertise; instead of manually analysing datasets, auditors will be able to identify significant patterns and anomalies that warrant further scrutiny. This shift will enhance clients' ability to manage business risks, address internal control deficiencies, and detect potential fraud. Ultimately, data visualisations will symbolise a strong client-auditor relationship and become an essential component of the

audit process (BDO, 2022).

Ultimately, balancing technical prowess and human judgment is critical to success. By integrating human and technological strengths, auditors can produce high-quality, efficient, and effective audits that satisfy stakeholders' evolving demands. The audit profession has a bright future ahead of it. However, we must monitor how technology affects it to ensure auditors have the abilities and know-how to thrive in this rapidly evolving landscape.

It is crucial to understand that humans and machines will work together in the future of auditing, not with machines replacing humans. Auditors who accept and adapt to technological change will be well-positioned for future success.

### **Limitations**

The present study is subject to several theoretical and empirical limitations. First, a literature review is, by nature, an ongoing process - particularly when addressing a topic characterised by a rapidly expanding body of research and a limited available sample size for analysis. Consequently, the study's narrow analytical scope may have inadvertently omitted certain aspects relevant to the research objective, constraining the potential for broader generalisations. Second, the empirical findings are derived from a small sample of 11 respondents and are geographically confined to Doha, Qatar. This limited sample and specific contextual focus may restrict the generalisability of the results, potentially reflecting conditions unique to Qatar's economic environment rather than the profession at large.

### **Recommendations For Future Research**

In consideration of the potential gaps in knowledge, the following recommendations have been proposed:

- Recent technological advancements have significantly impacted the audit profession. Auditors must adapt to technological changes and adjust instructional approaches to meet workplace needs. IT, cybersecurity, and data analytics should be included in the AICPA's expanded exam coverage. Business school accounting programs should include additional IT and data analytics courses to broaden their offerings.
- Data analytics and AI have improved audit effectiveness and efficiency. Auditors' human judgment and expertise will always be crucial, even though these technologies can enhance audit quality and provide value. Therefore, rather than

- using technology to replace expert judgment with cynicism, auditors must ensure that technology is used effectively to improve the quality of audit procedures.
- Accounting professionals must be knowledgeable about technological changes and have a holistic approach to training, competencies, and curricula aligned with how organisations create long-term value.
  - IT should be integrated into the auditing education system to reflect changing classroom environments and practices, rather than being viewed as a separate skill set.
  - Programming languages like Python and SQL should be taught to auditors and user-friendly technologies like Alteryx. Scholars may examine current accounting curricula and certifications, such as ACCA, CPA, and ICAEW, to observe how they have modified to reflect industry changes, particularly with regard to data analytics competencies.
  - Working with stakeholders such as regulators, standard-setters, and technology experts, the audit profession can create a future audit framework that meets society's needs. This entails investigating novel forms of assurance beyond traditional financial reporting, like sustainability reporting, and implementing a stakeholder-oriented plan that considers the interests of all parties involved.
  - By following these recommendations, the audit profession may remain relevant and effective in the face of technology innovations and shifting stakeholder expectations.

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## Appendix A – Interview Questionnaire

### Research Questionnaire

**Topic:** The Impact of Emerging Technology on the Role of Auditors in Reshaping the Future of Audit

This research paper explores how emerging technology (e.g., blockchain, data analytics, etc.) has changed the role of auditors and how it is likely to shape the future of the audit profession. It is particularly interested in understanding the challenges and opportunities that arise with the increasing use of technology in auditing and how firms adapt to these changes.

Your participation in this study would be greatly appreciated and contribute significantly to understanding this research.

1. How has modern technology impacted the traditional responsibilities and tasks of auditors?
2. Can you provide examples of technology currently used by auditors to streamline their work?
3. How is technology changing how auditors communicate and collaborate with their teams and clients?
4. What challenges do auditors face in adapting to new technology, and how are they overcoming them?
5. How does the use of technology impact the effectiveness and efficiency of auditing processes?
6. How is technology helping auditors to detect fraud and other financial irregularities more effectively?
7. Can you discuss any potential ethical concerns related to the increasing use of technology in auditing?

8. How do you see the auditor's role evolving in the future as technology continues to advance?

9. How do you see technology affecting the future of the auditing profession? (Specifically, AI)