



ACCOUNTING AUDIT PROFESSION IN DIGITAL TRANSFORMATION ENVIRONMENT BETWEEN THEORETICAL FRAMEWORK AND PRACTICAL REALITY 2023

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Article history:	Abstract:
Received: 1 st March 2023 Accepted: 30 March 2023 Published: 6 th May 2023	<p>Digital transformation (DT) has become the most important requirement of the working environment in enterprises because of its importance and its significant role in all occupations, especially the profession of accounting auditing through its technological and advantages despite risks and constraints.</p> <p>The accounting profession, like any, must be flexible, evolve, adapt to technological evolution and embrace DT. Whatever the technological development, DT and other nature and mechanism of providing audit services, the main objective of this profession will remain the need for owners of enterprises (especially Joint Stock Companies) to have a professional opinion independent of the management's adequacy in using its available resources and achieving sustainability.</p> <p>The study concluded that emphasis should be placed on training and developing the skills of employees in the field of auditing accounts on an ongoing basis and familiarizing them with all developments in the modern business and technological world environment, digitization and all factors affecting clients' financial centres or the sustainability of their resources and the continuation of their businesses.</p> <p>In addition to developing and activating the professional organization of the accounting and auditing profession in line with the requirements of both rational corporate movement and thoughtful DT; In addition to updating the Charter of Professional Conduct to which the certified accountant and auditor must adhere under the cloud computing environment, electronic auditing and all modern forms of DT. It should be preceded by a very important step: regulating a legislative and legal environment that regulates work in the new digital business environment and sets standards for digital accounting work.</p>

Keywords: digitization - accounting, auditing, digital transformation (DT).

INTRODUCTION:

It's the 21st century where we can see digitization steps in every intersection of life, and these advances in digital technology prompt enterprises to reimagine the way they do business, and audit companies are no exception, with many embracing DT processes and its benefits.

In an effort to adapt to this constant change that needs to have technical capabilities is an integral part

of each organization's success - regardless of its area of work, specialization or size.

These cognitive techniques have redesigned the business world in general and the accounting and auditing profession in particular. Artificial intelligence(AI) can help accounting audit companies improve and facilitate the functioning of the profession, reduce the workload of the auditor, eliminate paper files, reduce costs, free workers to



perform critical tasks, and provide better, faster, more effective and efficient services.

Notwithstanding the development of the accounting audit profession, there are still economic institutions that rely on the traditional method of the profession. However, attention to the accounting audit profession will increase in view of the important role played by this profession in the economic and financial sphere as this function brings transparency and objectivity to financial lists; DT will help develop the accounting and auditing profession despite all constraints and challenges as it contributes to the rapid completion of financial processes, audits and financial analysis.

It has become imperative for enterprises to compete and prepare for integration into an increasingly competitive global Fourth Revolution economy. It will prompt stakeholders to work harder for the use of modern technologies and the development of current accounting standards to keep pace with these digital technologies and meet the challenges of the current era of persistent crises that need governance systems that manage their risks and ensure their sustainability and resources.

1-Objectives of the study:

This study aims to:

- Highlighting DT and its importance
- Highlighting the impact of DT on the exercise of the accounting profession and the accounting audit profession in the modern DT environment.
- Comparing the practical realities with the theoretical framework of the audit profession within the framework of modern technological and DT in economic institutions.
- Discover the impact of DT on enterprises as well as whether it helps to raise the enterprise's profile and differentiate it from other economic institutions.

2-Study methodology:

The study drew on the descriptive curriculum to describe and clarify the relationship of the audit profession to DT environment and its reliance on it in different institutions, and to demonstrate its impact on it. In order to achieve the research objectives, the induction, extraction and analysis method of relevant professional and academic literature obtained through research was adopted in the following databases: (Research Gate, SSRN), professional papers were also collected by searching the web pages of the largest audit companies and professional bodies of accountants and auditors (Deloitte, ACCA). The following research topics were used: digitization in accounting, DT, changes and trends in the accounting profession, cloud computing, AI, auditing, and we

selected the articles most relevant to the research topic written in English and Arabic.

3- Review of previous studies:

A study addressed the impact of DT of the accounting profession between the theoretical framework and the practical reality in economic institutions, the problematic impact of the DT environment on the accounting profession in the economic institutions of Al Wadi State of Algeria and the study relied on the descriptive and analytical curriculum, The study tool was distributed to a sample of 41 individuals from specialists and experts in the period from 5 months 2021. It was found that DT of the audit profession affects the profession through modern techniques that facilitate the work of the auditor and present it in the best and most timely manner (Atali Shima, et al., 2021).

Theoretical framework:

At the outset of the accounting audit profession, the accounting profession itself must be addressed. It is the traditional profession that globalization, digitization and technological innovation have not been able to override its established norms and principles over the years. business practices and business processes without abandoning these basic accounting rules and principles. (Gulin Danimir, and others 2019).

The work of the accountant begins with the recording of operations in the Unit in the Journal and the accounts are moved to the ledger. The trail balance of the audit is worked, and then the reconciliations of the inventory and the preparation of the final accounts and the general budget that depicts the financial position of the enterprise at the end of that period taken to prepare the financial statements. The auditor begins his work by analysing the data and information contained in the financial statements to ascertain their authenticity and conformity with the books and records, as well as by consulting the supporting documents of the books and records to verify their authenticity, i.e. that the auditor begins his work after the accountant has completed his work (sbkreston.com).

The basic differences between the accountant and the auditor are in terms of appointment, independence and responsibility. The auditor is appointed by a higher body with the authority to appoint him. The accountant is appointed by the administration, and therefore there is no management authority over the auditor and he enjoys full independence as opposed to the accountant, both of which are fully responsible to the appointee. (sbkreston.com).



1- Theoretical framework for the accounting audit profession

The audit profession has evolved in the world under the idea of separating ownership and management and this change necessitated a sound management system based on the division of labour and the determination of responsibilities and powers - along with a robust accounting system, Its function is to investigate, analyse, record and classify the financial measurable operations of the enterprise, present and study it in addition to a strict control system aimed at preserving the Foundation's funds, Prompt detection, treatment and upgrading of the enterprise's productivity (sbkreston.com).

Under these circumstances, there was an urgent need for some means that could convince shareholders that the accounts provided to them by their organization's governing body gave an objective, transparent, accurate and clear picture of the financial position and business results.

1-1-Accounting Audit Profession

- 1) What is accounting audit? The modern definition of audit as defined by the American Accounting Association's Audit Concepts Committee is: "a structured and objective process for obtaining and evaluating evidence of economic facts and events, in order to ascertain the degree of conformity between those facts and established standards, and to communicate the results to users of information interested in such verification". (sbkreston.com)
- 2) By reference to the definition, the basic pillars of the audit process can be identified: (sbkreston.com)
 - Inspection process: Data, documents, records and financial statements are checked.
 - A process to verify that these statements, documents and financial statements are in conformity with accepted accounting principles.
 - An impartial technical opinion where the overall view is expressed that the final statements reflect the outcome of the work and the financial position of the Unit as at a given date.
- 3) Main Types of Audit
According to the modern division of audit, it is divided into (Attali Shima, et al., 2021:(
 - A)Financial Statements Audit
 - B) Audit Compliance
 - C) Operational Audit: Which is becoming increasingly important.
 - D) Other types of auditing: There are multiple divisions of auditing and from different angles in

terms of who handles the audit process. The audit is divided into internal and external auditing.

1.2- Ethics of the accounting and auditing profession

What distinguishes the accounting profession is its acceptance of the responsibility to act in the public interest, and therefore the accountant's responsibility is not only to meet the needs of the individual client or employer; Rather, the accountant must observe and comply with ethical requirements of professional conduct in the public interest. Accountability as a profession based on ethics in responding to the environment surrounding it and the environment has influenced accounting thinking both in Muslim and Western societies, Accordingly, international and local professional organizations have issued codes of ethics for accountants and auditors according to the nature of each society, thereby enhancing public confidence in the performance and reporting of accountants and auditors when adhering to the basic principles of these codes (Saeed Sausen, Mohamed Abdul Wahid, 2014).

The main reason for professional conduct in any profession is to create confidence in the services provided. and this subject takes on a greater accounting and auditing dimension because of their relationship with other professions because they provide their services to many parties, The lawyer, for example, only provides services to the client, and since the interests of these groups are so conflicting that the accountant and the auditor must conduct themselves, My ethics enables them to accomplish the task that society has placed on them. (Saeed Sawsan, Mohammed Abdul Wahid, 2014)

Ethics is defined as a state of mind rather than a set of rules, principles relating to characteristics such as honesty and integrity, reliability, responsibility and other aspects of valuable professional conduct versus misconduct (Saeed Sausen, Mohamed Abdul Wahid, 2014, p. 6-4).

In order to have legal force, the Charter must have a source of ethical foundations and principles, thereby providing it with binding force of any kind and degree. And if the ethical charters available in accounting are limited to the data of abstract human thought and its compulsory strength derives from professional commitment, the requirements for the success of the profession and the earning of the trust of clients and society at large, or from



positive legislation or both, The source and reference of accountant and auditor ethics in the era of DT and enterprise governance is the same in the traditional accounting era by increasing the presence of digital skills, transparency and disclosure that require more efforts to continue and achieve successes (Saeed Sausen, Mohamed Abdul Wahid, 2014).

1.3 Audit risks and auditor's role in correcting errors

The risk of scrutiny is defined as "the likelihood of an improper opinion on the checked financial statements due to the auditor's failure to detect material errors that may exist in those lists in which he or she expresses his or her opinion". The risk of scrutiny is one of the important factors that the auditor should take into account when planning the audit process as well as when evaluating audit evidence. The American Complex of Chartered Accountants has emphasized that auditors must plan the audit process so that its risks are minimized The risk may be quantified in the form of a certain ratio or non-quantity between a ceiling and a minimum (Atali Shima, et al., 2021).

2-Theoretical Framework for DT Environment

DT provides enormous potential for building effective, competitive and sustainable societies, through radical change in the services of different consumers, employees and beneficiaries while improving their experiences and productivity through a series of commensurate processes; DT requires enabling a culture of creativity in the working environment, and includes changing essential components of work from infrastructure, operating models, to marketing services and products (Rashwan Abdul Rahman, Abu Rahma Mohammed, 2020).

Thus, it has become difficult for organizations, both governmental and private, to deal traditionally with the tremendous advances in technology. This has created a new working environment of DT that has become necessary and has had a profound impact on the auditing profession. Here we will touch on the concept of DT and the motivation to turn to it, its models, its technologies, its benefits and its risks.

What is DT? DT is the process of moving towards total reliance on digital technologies and in the interests of enterprises. This environment has an

infrastructure that helps to facilitate and mention operations; Media and Communication Technologies, Smart Cities, Digital Health, Digital Education (Attali Shima, et al., 2021).

.2.1-DT Components

Components of DT environment by nature are (Aatly Shima, et al., 2021).

- 1) **Techniques:** a system of hardware , data, storage and software operating within technical environments and information centres that allow all assets to be used with uninterrupted operational efficiency to complete DT process; The process also requires ensuring an appropriate level of service for all interested parties (the Organization's members, clients and suppliers) through professional task forces responsible for managing the technical system and network infrastructure, whether local or cloud.
- 2) **Data:** Business organizations are supposed to undertake systematic and effective data management and analysis efforts and utilize them in line with the organization's objectives and expectations to provide reliable and complete qualitative data while providing and developing appropriate tools for statistical analysis and the search for future forecasting data.
- 3) **Human resources:** These qualified resources, capable of using and analyzing data for effective decision-making, are the vital aspect without which organizations can hardly apply DT.
- 4) **Processes:** To ensure optimal application of the transformation, organizations need to establish an effective technical building that allows performance development both internally and externally. All policies and procedures covering their activities and processes are interconnected with the necessary techniques, developed applications and processed data.

.2.2-DT Process Models

After identifying the most important components of DT process we will clarify the most important models applied to it in the organizations where there are approximately 15 models we will focus on 4 of them (Aatli Shima, et al., 2021).

-**Social technical model**, competitive force analysis model, digital asset management model, technical model.

-**Gradual transformation model**, dynamic transformation model, organizational evolution model, cost-benefit model.



-Rental Transfer Form, ICT Participation Form, Behavioural Model.

-Integrated Transformation Model: Based on the philosophy of systems and the desire for integrated transformation of all departments and organizational levels to build a digital organization, the Information Technology Department seeks to link change in the business system to modernization in the electronic management system.

-Model Optimization: Based on the study of the ideal solutions for the applications of information-communication technology through simulations and the design of experiments and pre-laboratory tests.

-Strategic Transformation Model: This model assumes that information and communication is a capital asset of an organization, and the organization's position in the sector or activity to which it belongs is determined by the value of its information and communication technologies.

-Partnership in Information Model: depends on partnership for a certain period ending with the completion of DT process. This partnership is done by relying on an information company to provide service or by subscribing to a local or international information network.

.2.3-DT Environment Technologies

DT is based on modern technologies, and the transformation environment encompasses various sectors. One of the most important tools used to ensure that organizations reach their desired objectives of these processes (Aatli Shima, et al., 2021):

- 1-New technology: (block chain technology, cloud computing, IoT, Big Data, AI).
- 2-Digital Government
- 3-Innovation for sustainable development.

.2.4-DT Constraints:

There are many obstacles to DT in various types of companies, including auditing accounts (Isaac Ismail, 2022, p. 4):

- Lack of budgets for transformation programmes, lack of competencies and qualified capacities to lead the transformation, and lack of adequate skilled staff to deal with ICT
- Lack of data for DT, lack of infrastructure capable of technological transformation of information, and fear of information security risks as a result of the use of technological means is one of the greatest challenges to the successful implementation of the overall DT process.

- Poverty in the legislative and legal environment that protects the rights of all parties and regulates carefully and professionally the work in the digital and virtual world and what they call newly Metavers.

.2.5-Benefits and Risks of DT

1)Benefits of DT: Through the preceding paragraphs they can be inferred the advantages and benefits of DT (Aatly Shima, et al., 2021):

- Increased organization, efficiency and rapid handling of enterprises' data, thereby increasing productivity.
- Improve efficiency and reduce spending, apply new services quickly and flexibly, thereby improving products.
- Provide a strategy to create higher competitive value, sophisticated task forces, and sustain a culture of organized creativity.
- Achieve radical change in the services provided to individuals and improve their experiences and productivity.
- Increase workflow efficiency and reduce human errors.

2-DT Environment Risks: However, we cannot lose sight of the cybersecurity risks and DT risks with every new digital invention introduced, adding potential threats as cybersecurity risks are considered specific to the company's business model and values (Zaghip Nicola, et al., 2021). These risks can be summarized below (Atali Shaima, et al., 2021):

- Cybercrime against intellectual property such as encroachment on a design or model.
- Cyber extortion, monument, commercial fraud, hacking of commercial websites causing huge material losses.
- Offences of unlawful use of electronic payment tools and crimes of robbery of credit cards.
- Electronic attacks in the financial services sector, fraud offences and assaults on funds, such as entering incorrect statements or unauthorized instructions or using impermissible data and operations, by corrupt employees.
- Cybercrime against Governments: offences that attack Governments' official websites and network systems and focus on the complete destruction of their infrastructure.

.3-The theoretical framework of the accounting and auditing profession in DT environment



Through the foregoing, we conclude that digitization can change business models by removing undesirable costs, reducing waste and accelerating the pace of the Organization's work. The new information technology architecture also helps to provide means to get rid of most unnecessary expenditures and operate at a fraction of the costs previously incurred by the organization (Zaghib Nikola, et al., 2021).

3.1-The Future of Accounting

How has the accounting profession changed from in old contracts? Technology will support and not replace accountants (Zakaria Hassanin, 2022).

Since 2015, industry leaders have been sounding the alarm for accountants, convinced that emerging technologies - especially automation - will end the accounting we know. As recently as 2019, accountants questioned by Robert Half on the impact of automation on their profession expressed concerns about replacement.

Events since then, including the Covid-19 pandemic, have shown that accountants, like other professionals, and everyone is more concerned about adaptation than their fear of replacement.

- Tomorrow's accountant is more creative and strategic than ever (Zakaria Hassanin, 2022)

In work and the business world as in life, change is the only real constant, and professionals in all industries always find themselves dealing with major changes - many of them driven by emerging technology.

Accounting is no exception as this profession has gone beyond being merely bookkeeping, payroll and procurement and has taken on an increasingly strategic role in companies; The skill set and job description of tomorrow's accountant require a significant expansion, while continuing to adhere to the fundamental competencies of the profession.

So, accounting as a job will pay more attention to basic competencies that grow over time, focusing on lifelong education and developing the skills required to cope with a complex and constantly changing business environment, than the skill set that an individual acquires through certificates, especially chartered accountants.

Automation and other data-based techniques are ripe for accountants' liberalization rather than restriction, and organizations that understand the potential and importance of these technologies - investing in the tools and training required to help their accountants make full use of them - will be at the forefront.

.3.2-Audit under electronic data processing

- **Definition of electronic auditing:** a computer-assisted audit of work that uses electronic records partially for auditing purposes. If it uses the computer to record its operations and activities and processes its data electronically, it is eligible for electronic auditing (Atali Shima, et al., 2021, p. 52).

The electronic audit process requires sophisticated technology different from that used in traditional audits in that there must be compatibility between the systems used in the Organization's operations and those of the electronic auditor's work, An auditor using electronic auditing needs to design special software for each electronic data processing process based on the compatibility of the software and operating systems used among all parties.

▪ Standards and procedures for auditing under electronic data operation:

The auditor must be informed of the accepted basic auditing standards and any other issuances of additional standards and the concepts associated with auditing under the client's use of the computer in the operation of the accounting system The auditor must comply with the auditing standards adopted, noting that the general standards are not significantly affected by the client's use of the computer because they are primarily related to the auditor's personality, but we must note the following (Atali Shima, et al., 2021):

- **Scientific qualification and practical training standard:** requires the auditor to pass special qualification and training programmes; The computer auditor must be qualified, trained, qualification and training procedures different from the regular auditor's qualification and training procedures.

- **Standard of independence and impartiality:** with emphasis on the concept of independence in both actual and apparent factions and on all team members, especially those outside the audit office (systems expert, Internet and telecommunication).

- **Standard of professional care:** The auditor must exercise adequate and appropriate professional care.

- **Field work standards:** The field work standards are three and how these standards are adhered to differs greatly in case of electronic auditing from them under the manual operation of the accounting information system.



- **Report standard:** The report's criteria do not vary depending on how the client operates its accounting system and communicates accounting information because the report is the final product of the audit process as planned and implemented. Therefore, the computerized auditor needs to prepare its report in compliance with the four reporting standard:

- 1- To note that the lists have been prepared in accordance with the accounting standards and applicable laws and regulations.
- 2- To refer in his report to circumstances in which the application of accounting principles has not been taken into account.
- 3- To assume that disclosure is sufficient unless otherwise indicated in his report.
- 4- To express his opinion on the financial statements as a single unit or indicate that this is not possible and why.

- **Audit procedures for electronic systems:**

These actions in case of electronic data operation are as follows (Atali Shima, et al., 2021):

1) Computer Audit: The authenticity of the data entered is verified by reviewing the documents as well as auditing the outside information to ensure the integrity and objectivity.

2) In-computer auditing: Internal operation is validated in the light of the prepared software, by comparing manual operation with electronic data operation, or running the same data using another computer software and making the comparison.

3) Computerized auditing: The auditor can use computer capabilities to perform certain audits: (validation of accounting processes, extraction of anomalous balances, analysis of balances in excess of or below specific figures for further examination, analysis of certain balances, use of computer capabilities in the preparation of lists and financial reports for short periods, utilization of information feedback method).

- **Nature and relevance of electronic evidence:**

Studies confirm several important evidentiary facts in the electronic operation of accounting data and e-commerce. The most important of these facts is the role and purpose of the evidence and the fact that it will be mostly electronic non-paper evidence that is difficult to easily retrieve and offer for change by the company's management. They need to be collected through new procedures, many of which rely on information technology, especially ready software. And one of the most important images of this evidence is

the electronic audit software, the internal control system. Electronic authentication, electronic signature, electronic footprint and electronic documents. The auditor must use all such auxiliary means to prove evidence (Atali Shima, et al., 2021).

- **Advantages and risks of auditing under DT**

The expansion of the use of computers in the field of accounting has led to many problems that did not exist in the manual operation of the data, the most important of which are the ease of committing fraud offences and the difficulty of detecting them, and the prevalence of computer virus offences. The most important of these risks are (Atali Shima, et al., 2021):

1) Input risks, which relate to the first phase of the system, are:

- Inadvertent (unintended) entry of incorrect data by staff.

- Intentional (intended) entry of incorrect data by staff.

- Unintentional destruction of data by employees.

- Deliberate (intended) destruction of data by staff.

2) Data operating risks, which relate to phase II of the phases, are:

- Illegal (unauthorized) access to data and system by staff.

- Illegal access to data and system by persons outside of origin.

- Many employees subscribe to the same password.

- Insertion computer virus to the accounting system and influence the operation of the system data.

- Intercept data access from server devices to users' devices.

3) Computer output risks: related to the phase of data processing process outputs and their lists of accounts or reports and magnetic file tapes and how those outputs were received:

- Blur or destroy certain items of outputs, or create false/incorrect outputs.

- Stealing data/information, making unauthorized (licensed) copies of outputs.

- Unauthorized disclosure of data by displaying it on screens or printing it on paper, or printing and distributing information by unauthorized persons.

- Addressing wrongly distributed publications and information to persons not authorized to receive a copy.

- Delivery of secret documents to persons who do not have security access for disposal.

- **Sources of accounting data threat**

Inaccurate accounting data adversely affect the efficiency and effectiveness of the organization, generating unreliable financial reports, and



accountants identify two sources of such threats (Atali Shimaa, et al., 2021):

1) Errors: made accidentally and arose from two sources: miscalculation and lack of interest, resulting from lack of knowledge or lack of training.

2) Irregularities: made intentionally and were modelled on either administrative fraud or intentionally misrepresenting accounting and financial information (innovative accounting) or theft of the Organization's assets and information.

.3.3- Accounting and Auditing Profession's Relationship with DT Trends

A) The new business world requires the audit profession to be more accurate and detailed of the source of the client's data and the way it is obtained so that practical decisions can be made more worthily. Previously, the audit and audit were done retroactively and will become real-time and real-time (Atali Shimaa, et al., 2021).

B) Before starting the automation and DT process, companies must assess the automation of tasks and accounting processes first. It is therefore necessary to distinguish between routine tasks that can be easily automated and non-routine tasks that are difficult to implement by machines or software. Functions and tasks that require critical thinking, high-level creativity and training as well as human contact will not be automatically triggered right now. Digitization and automation are useful for auditors during the following processes: audit planning, analytical audit procedures, relative importance assessment, internal control assessment and risk assessment (Gulin Danimir, and others, 2019 p503-504).

C) Reports by the Institute of Administrative Accountants (IMA) indicate that the accounting profession has an excellent opportunity to take advantage of DT taking place in today's society, and that the role of professional accountants as trusted advisers along with digital companies opens up new opportunities and areas of work if accountants understand the opportunities offered by technology. Technological and economic change and rapid thinking meant that occupations were a necessity rather than a mere choice, and occupations that did not comply with technological changes would undoubtedly take a place on history's dusty pages. (Rashwan Abd al-Rahman, Abu Rahma Mohammed, 2020, p. 11).

D) As the number of procedures and transactions conducted by accountants through AI and automation systems has begun to increase, employers are looking

for more technological talents in accountants, and virtual accountants are now appearing. It is felt that the accounting profession needs engineering and accounting engineering capabilities in order to redesign the profession in the light of digitization, AI and the fourth industrial revolution. Accountants who are trained as accounting engineers or who develop themselves in engineering materials are currently preferred because the accounting profession is traditional and has shifted to smart technologies (Rashwan Abdul Rahman, Abu Rahma Mohammed, 2020p. 12).

E) Leveraging Cloud, Automation and AI (Zakaria Hassanin, 2022)

-Cloud computing technology has affected the collection, storage, processing and distribution of data among stakeholders, and as a result accounting information has been strongly influenced by this change, resulting in a significant shift in the competencies and qualifications required as an accountant's production for the successful performance of their functions.

-It has become possible for accountants to put their unique human skills to work on transforming high-quality data insights into more effective financial planning and reporting in an integrated environment. They can also collaborate with peers from other business units to leverage financial data to drive innovation, build more flexible and agile supply chains and develop growth-enhancing business plans while ensuring continuity.

- **Companies that embrace the idea of computerized accounting information systems can benefit from the following benefits:**

1-Cost reduction.

2-Access and use anytime, anywhere and without the need to maintain software on the company's computers.

3-Availability: Where a person can connect to the Internet, access the files on it and communicate with others without having to be on the job site.

4-Unlimited Storage.

- **Tools and procedures for the study:**

Based on a basic source of data collected from a collection of university research, scientific articles and field studies carried out by universities and the largest audit companies and professional bodies of accountants and auditors Deloitteu and ACCA, we will report the results of these field studies with evidence and data achieving the research objectives of studying:



- 1) The impact of DT and its importance on the accounting and auditing profession in the technological environment.
- 2) Comparing the practical reality with the theoretical framework of the audit profession in the framework of modern technological and DT.
- 3) Knowing if DT helps to raise the organization's profile and excellence.

First: How does DT affect the accounting and auditing profession in the technological environment?

A) DT affects corporate strategic and competitive objectives in general, also affects business models, competitive advantages and the company's market approach, and DT has a significant impact on accounting information and management control systems (Gulin Danimir, and others 2019).

B) Key digital solutions that have a significant impact on the accounting profession are AI and machine learning, and although AI is still in the early stages of development, it has already been used by 18% of companies surveyed by PWC at the end of 2017, especially for the smart document OCR (Optical character recognition) and automation of payments conversions (Gulin Danimir, and others 2019).

C) Huge data affects data analyses and accounting in a number of ways; For example, by influencing how a business is run and how financial statements are prepared and audited and big data have a significant impact on the quality of the decision-making process, Big data can reduce reporting time using analytical skills and tools Big data will have an impact on financial and administrative accounting, but also on auditing for reliable information (Gulin Danimir, and others 2019).

D) The traditional auditor's profession will soon come to an end, especially since all the accounting and auditing standards adopted can be developed within a program designed by a technical expert to carry out

electronic audits. Thus, the task of accounting companies has become easy and they can provide digital auditing services from their offices with the help of a digital technical expert and auditor. Thus, the role of audit companies is shortened through the use of pre-prepared electronic software and the analysis, formulation and reorganization of results (Talal Abu-Ghazala 2020).

E) Reports by the IMA Institute of Administrative Accountants (IMA) indicate that there is a steady relationship between the institution's assessment of the value of professional accreditation and its position in terms of financial and accounting functions (Rashwan Abdul Rahman, Abu Rahma Mohammed, 2020p. 9).

F) Currently, business accounting applications lead the accounting technology market and upgrade accounting software: the global accounting software market was valued at over US 11 \$ billion in 2018. According to Fortune Business Insights, the market is expected to reach 20 \$ billion by 2026, marking a remarkable CAGR of 8.02% during this period.

The UI of accounting software is expected to become more attractive to meet customer requirements, says Fortune Business Insights analyst: "Preference towards new and advanced accounting software over traditional software is growing as it is becoming obsolete." "Where traditional accounting programmes lack technological competitiveness, creating an environment for expanding and upgrading the market for modern accounting programmes.

In 2018, the market value in North America was 3.76 \$ billion, and the Asia-Pacific region is expected to record strong demand for ERP software to manage spreadsheets and better understand tax management (accaglobal.com).

See Figure No. (1) as posted on the Accredited Chartered Accountants' Association's website.



Figure No. (1) as posted on the Accredited Chartered Accountants' Association

Second: Comparing the practical reality with the theoretical framework of the audit profession within the framework of modern digital and technological transformation in economic institutions.

- A) The development of accounting software leads to an understanding of invoices rather than simply matching order numbers and invoice amounts Blockchain allows companies to access the same information in real time from different sources, Most companies use this delivery method to secure their sensitive accounting data and speed up complex processes In addition to uninterrupted security and transparency, blockchain is sufficiently capable of replacing traditional methods of handling audit, compliance and settlement functions (Gulin Danimir, and others 2019).
- B) The use of IoT in accounting information systems has brought accounting closer to information technology and strengthened the relationship between them, and has made asset processing and inventory easier than ever, enabling technology to track inventory without manual calculation and using what are known as smart shelves. Smart Stores (through which inventory or assets can be found at all times and easily and can easily monitor and track geographically distanced or dispersed assets and easily monitor their locations.

The chances of catching thieves increase and the chances of cessation of production decrease. This

is reflected in the preparation of financial lists that become smoother and easier, changing the methods and practices of the audit profession faster and more accurately. Without forgetting that it is the duty of audit offices to explain to their customers the potential risks of using IoT technology such as data violation, identity theft and other various security problems (Atali Shima, et al., 2021).

- C) Results of the survey conducted by PWC on a sample of German companies showed that 8% of the companies surveyed use blockchain technology and those who already use blockchain want to use it above all to ensure data integrity, transaction processing, customer relationship management and suppliers. PWC also uses it to sign contracts (Gulin Danimir, and others 2019).
- D) Augmented and mixed Virtual Reality technologies provide new ways to explore, analyze and share data. According to Robert Half's survey, 71% of managers in the United States either use

Some kind of virtual reality or they plan to integrate it within 3 to 5 years (Zakaria Hassanin, 2022).

- E) KPMG conducted a study on digitization in accounting, key digital solutions already being implemented in German companies or will be implemented in the near future, the result being (Gulin Danimir, and others, 2019):

Non-paper accounting, interfaces for internal or external systems, data quality management,



processes and timely reporting, automation and standardization of systems and integrated standardization system, and creating transparency, big data analytics, visualization tools and cloud computing.

F) Using AI to create financial data
 ChatGPT does a good job in an experiment to create a trial balance. Despite some of the downsides we have heard about recently, it is an AI tool with tremendous ability when used to support the accounting workflow. In order to verify this, it has developed two experiments that simulate realistic tasks in accounting roles:

The first test tested for ChatGPT's ability to classify items in the balance of audit, with a financial statement rating assigned to each item in the list of accounts. To prepare this experiment, the review balance label list was brought into the Google spreadsheet and an additional function associated with the OpenAI language model of ChatGPT was installed after some adjustments were made in some GPT functions, and the researcher inquired on the function "In one words: what is the best IFRS rating for this?"

AI excelled in reading and accurately classifying audit balance entries and the results were great, classifying the tool "Advances" as "financial assets - loans and receivables", and "Computer software" as "intangible assets" and "payable dividends" as a "rolling obligation, but one of the seemingly trivial obstacles was the tool's inability to assign some words without further information, The researcher continued to ask another question requiring a source and summarize a lot of information and by working from OpenAI's publicly available website s Accounting Standard (IFRS 17) for comparison, the current standard contains more than 30,000 words, it gave an accurate but

overly simplistic summary; Those familiar with the criterion will know how comprehensive it is, so the researcher re-requested the tool to "provide a longer summary", this time the summary was 394 words and clarified, and the tool was then asked to "provide a link to this standard on the IFRS website", and obtained a precise URL addressed to a page containing official guidance.

-Although the tool achieved reasonable performance as a research facility However, it cannot rank the sources by relevance, and know the reliability of these sources and cannot assess its quality, so this tool still needs some procedures to verify the authenticity of the information we obtain from it. and the management of any organization that wants to use this tool needs assurances that AI does not expose its data to external parties (accaglobal.com).

G) I recently surveyed LinkedIn to discover feelings about AI tools in accounting, and the question was for accountants whether AI like ChatGPT would change how they work in accounting? Of the 785 respondents 65% said "yes" it would be for the better and 11% said "yes" it would happen but for the worse and 24% said "no" would not affect. Despite the deviation of results towards optimism; Most respondents believe that AI will affect how we do the work, but there are those who think it will be negative (accaglobal.com).

H) The vigilance and efficiency of auditors and observers in discovering innovative accounting practices _ that have been in place in recent years in the business world _ may not be enough and may not be the most powerful means of combating them, but need good governance systems supported by appropriate and thoughtful DT technology (Seventh Day, et al., 2017).

Table (1)

Results of a survey for Deloitte

How did you consider the ethical risks and biases associated with AI?		What is your organization's greatest challenge during automation audit, metrics and/or AI?		Does your organization's audit team audit the risks associated with using advanced capabilities (e.g., machine learning, automated processes)?		How do you describe your organization's accreditation and the use of digital capabilities (e.g., analytics, machine learning, automated robotic processes)?	
%11	We have developed an	%22	Lack of auditors' skills and	%23	Yes	%6	We don't benefit from digital capabilities



	ethical risk framework that we apply constantly		experience among				right now, and we have no plans to do that.
%18	We have taken into account ethical risks and prejudice, but we have no formal framework.	%18	Lack of a formal methodology and framework	%16	No, but we're planning it for the next 12 months.	%30	Basic - we currently benefit from basic data analyses, data visualization and automated processes
%20	We have taken into account ethical risks and prejudice, but we have no formal framework.	%8	Lack of a formal methodology and framework	%17	No, we're not planning .	%31	Construction - will currently benefit from basic data analyses, data visualization and automated processes
%51	Answer: I don't know/doesn't apply	%8	Inability to review design documents	%44	Answer: I don't know/doesn't apply	%12	Advanced - You currently benefit from analytics, data visualization, robotic process automation and other types of advanced digital technologies
							(Deloitte, 2021)

I) During Dbriefs' webcast in 2020, Deloitte discussed an overview of emerging technologies and effective risk management techniques for DTs, During this broadcast, Deloitte surveyed nearly 3,000 specialists about the impact of DT on their organizations and the level of IA engagement, and what are their biggest challenges in auditing advanced digital capabilities and their approaches to dealing with ethical concerns related to AI. The results are see table 1 above:

- The majority of respondents, nearly 75%, reported that their organizations were beginning to take advantage of the opportunities offered by digital technologies, although there was a significant diversity in organizations' levels of progress.
- Lack of skills and expertise among auditors and lack of a formal methodological framework for auditing are seen as the greatest challenges for organizations when auditing advanced digital capabilities
- With only 11% of respondents officially dealing with ethics and bias concerns, there is ample opportunity to leverage the advantages of trustworthy AI, including improved decision-

making, reduced legal costs, and increased brand value. (Deloitte, 2021).

Third: Is DT helping to raise the enterprise's profile and distinction from other economic institutions?

- A) Having a digital wallet as an electronic or online service has a significant impact on customers' confidence in online commerce and the volume of electronic transactions. (Gulin Danimir, and others 2019).
- B) In a recent survey conducted by Deloitte, 83% of executives said AI would be critical to the success of their business in the next two years, and 95% said they had concerns about the ethical risks arising from AI (Dbriefs, 2020).
- C) Leading the digital age by expanding digital software and effective risk management while accelerating the spread of robotic process automation technologies (RPA) and (AI), and this route carries many opportunities for the organization, and Deloitte considers that humans collaborate with machines to achieve strategic results, equip management and internal audit and



place them in a position to navigate the new risk range of this evolving technology landscape to help ensure that stakeholders maximize the value of these capabilities while being effective at the same time (Deloitte, 2021) .

D) DT makes accounting information published in a business's financial reports easily understandable and complicated. It contributed to the neutrality of accounting information and increased the quality of services provided to clients (Sharif Osman, 2022).

.1 Presentation and analysis of the study's data and discussion of its results

Through the study of the three theoretical frameworks and the practical study from the questionnaires of global companies, we draw the following findings:

- Accounting processes have become automated and need less time, and accountants are becoming more connected to their clients and increasing their consulting services, as the use of digitization and automation helps to complete and reduce routine and recurring tasks, which can (Accountants) from focusing on non-routine tasks that need creativity and further thinking and additional skills, allowing them to have more time (Gulin Danimir, and others 2019).
- Identifying barriers to DT and ways to overcome them can be a good first step to unlocking the accounting audit profession in its DT journey. The most important are the inability to provide DT components: technologies, data, human resources and processes.
- The use of cloud technology means centralizing data management, thereby significantly reducing waste and costs through improved communication and cooperation, facilitating data capture, access, sharing and analysis, improving transparency and quality despite increased data volume (Zakaria Hassanin, 2022).
- Blockchain has gained a reputation for its potential to improve the supply chain, but it has strong accounting potential too, there will be great demand for accountants who understand (and can use) distributed ledger techniques (and teach others about it!) to develop operations, audit, records management and more (Zakaria Hassanin, 2022).
- DT has made the accounting information published in the financial reports express honestly and faithfully through easy-to-understand financial

reports free of complexity and helps to verify them (Yitzhak Ismail, 2022).

- Most services now rely on cloud services and financial data available quickly, and therefore (customers) are willing to change accounting and auditing companies faster than in the past if they are not satisfied with the services they receive.
- Although digitization and automation have many advantages for successfully running a business and performing accountant tasks, automation and AI cannot perform the most valuable accountant functions of interpreting and analysing financial information (Gulin Danimir, and others 2019).
- All of the above has affected the way accountants perform their functions, and it will be necessary for them to know the new skills especially engineering (Gulin Danimir, and others 2019).
- All employees (accountants) need to develop critical thinking and problem solving skills, adaptability, flexibility and interaction; Continuous learning for a successful career, as well as good written and oral communication, decision-making ability, financial analysis, and professional governance.
- One of the most important risks to the security of electronic accounting information systems that should be focused on in the risk assessment and analysis process in an information technology environment is: Incorrect entry of incorrect data by the organization's staff, unintentional destruction of data, introduction of virus to the system computer, involvement of some staff in the use of the same password, as well as directing data and information to persons not authorized to receive it, and do not forget natural disasters and man-made disasters (Atili Shima, et al., 2021).
- Digitizing processes and implementing new programs that enable knowledge-based management can be very expensive, and is available only to large companies.

RECOMMENDATIONS

Through the above, we find the following recommendations:

- DT begins by building a digital strategy first and making improvements to the status quo. This can only be achieved by measuring the current digital potential of the organization or organization. Then, the requirements for investment plans are determined while identifying the barriers to digital integration to a comprehensive and well-structured



plan with change management for DT as a key requirement for reaching strategic objectives.

- In order to continue to add value to the company, accountants need to develop new skills and acquire new knowledge regarding the use of AI and other digital solutions in the modern business environment. All these developments need to raise the level of labour market inputs. This needs to increase the efficiency of faculty members of the faculties of economics towards DT. and there is a need for the accountants' union to play a role in DT processes organized through the provision of workshops and training courses to keep pace with the digital economy.
- Change in education is critical and the education system must change by focusing on critical and systemic thinking with a view to developing students' creative skills.
- Accountants will have an important proactive role in the management and implementation of the company's business, so it is essential that they collaborate with employees in other jobs, especially with information technology experts (Gulin Danimir, and others 2019).
- The profession has shifted from accountants to advisors, consultants and accountant engineers. Accountants therefore need to seize the opportunity to develop technology that facilitates and enhances their profession.
- Companies can accelerate DT processes, when they allow internal audit to help through effective risk management. (Deloitte, 2021)
- As digital investment grows, people must think about information technology risks more broadly in order to address all key areas where risks occur whether strategic, automation governance, guidelines, return on expected investment and management and control engagement.
- It is important and necessary to quickly enact the necessary laws and legislation that reveal modern accounting practices in a DT environment, good governance and virtual asset management, and to issue local or Arab standards of accounting practices and auditing in an electronic processing environment.

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