

## Accounting for the future: Technology contributions from a local perspective

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### Abstract:

The aim of the research is to discuss the scientific and professional future aspirations for accounting according to the technological reality, from a local Iraqi perspective. The research was launched from two main dimensions of the concept of accounting for the future: Analyzing challenges and ways to face them. As these two dimensions were dealt with according to the requirements of global accounting standardization and the developments of the foundations of information technology and their reflection in microeconomic accounting represented in activating accounting information systems through the use of cloud computing and blockchain, and in macroeconomic accounting represented in government and tax accounting, as well as Auditing accounts. The descriptive and analytical approach was adopted in analyzing the current accounting reality and local developments in accounting from a future perspective, and a questionnaire form was distributed to a number of academics affiliated with Iraqi universities. The research concluded that the contributions of information technology will be more clear in drawing accounting for the future through activating the accounting information systems for Iraqi companies, followed by auditing accounts and finally government and tax accounting. One of the most important challenges for the future of accounting in Iraq is the absence of pressure groups that work to consolidate accounting developments in actual practices in the Iraqi environment. And that one of the most important ways to face the challenges is to develop sound and objective plans that are compatible with internal environmental conditions and fulfill the requirements that support the future global adherence of accountability.

**Keywords:** Accounting for the future, Cloud computing, Blockchain, Information technology, Iraq.

### المحاسبة للمستقبل: اسهامات تكنولوجيا من منظور محلي

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### المستخلص:

هدف البحث إلى مناقشة التطلعات المستقبلية العلمية والمهنية للمحاسبة وفق الواقع التكنولوجي وذلك من منظور محلي عراقي، وقد انطلق البحث من بعدين أساسيين لمفهوم المحاسبة للمستقبل هما؛ تحليل التحديات، وطرق مواجهتها، ولقد تم تناول هذين البعدين وفق متطلبات

التوحيد المحاسبي العالمي وتطورات أسس تكنولوجيا المعلومات وانعكاسها في محاسبة الاقتصاد الجزئي ممثلة في تفعيل نظم المعلومات المحاسبية عبر استخدام الحوسبة السحابية وسلسلة الكتل، وفي محاسبة الاقتصاد الكلي ممثلة في المحاسبة الحكومية والضريبية، فضلا عن تدقيق الحسابات، وقد تم اعتماد المنهج الوصفي التحليلي في تحليل الواقع المحاسبي الحالي والتطورات المحلية للمحاسبة من منظور مستقبلي واعتماد استمارة استبيان وزعت على عدد من الاكاديميين بالجامعات العراقية. وتوصل البحث إلى أن اسهامات تكنولوجيا المعلومات ستكون أكثر وضوحا في رسم المحاسبة للمستقبل عبر تفعيل نظم المعلومات المحاسبية للشركات العراقية، يليها تدقيق الحسابات واخيراً المحاسبة الحكومية والضريبية. ومن أهم تحديات مستقبل المحاسبة في العراق هو غياب جماعات الضغط التي تعمل على ترسيخ التطورات المحاسبية في الممارسات الفعلية في البيئة العراقية، وأن من أهم الطرق لمواجهة التحديات هي وضع الخطط السليمة والموضوعية المتوافقة مع الظروف البيئية الداخلية والمحقة للمتطلبات التي تدعم المواكبة العالمية المستقبلية للمحاسبة.

**الكلمات المفتاحية:** المحاسبة للمستقبل، الحوسبة السحابية، سلسلة الكتل، تكنولوجيا المعلومات، العراق.

## 1. Introduction:

Francis Bacon says: "If a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties" (Al-ardi, 2009: 201).

The world economy is constantly changing and firms face global competition, technology innovations and increased regulation. (Mahmood et al., 2018: 2279) Therefore, the accounting profession has challenged the traditional model of financial business reporting, arguing that it does not adequately meet the information needs of stakeholders to assess the entity's past and future performance. At the same time, society questions the basic reason for the existence of the enterprise (it is to create wealth) due to the narrow focus that excludes the creation of value or justice for people, society and the environment (Dumay et al., 2016: 1)

In light of the rapid developments in the world, technical terms and concepts appear from time to time with environmental and social conditions that are reflected in the theoretical and practical frameworks of accounting science (Hussein et al., 2018: 2661). Fischer (Dull et al. 2003: 185) that during the 20 years in the past, researchers have explored how differences in the form of displaying information affect user decisions. Recently, the Internet has provided a new way for companies to publish a variety of financial information, including financial statements and annual reports. This exploratory study examines the effect of different presentation formats on users' judgments by studying the effect of hyperlinks on users' decisions and forecasts, the amount of information accessed, and the time used to make decisions. The results showed no differences when using the financial data prepared with or without hypertext links in Large

companies. In small firms, however, it was found that there were statistically significant differences in expectations, the amount of information that could be accessed, and the time to make decisions. These results mean that, under some circumstances, the use of hyperlinks in the financial statements may affect users' judgment.

The importance of research stems from the possibility of laying the foundations to understand what are the challenges facing the future aspirations of accounting in Iraq, which contributes to providing more objective and rational solutions to keep pace with the accounting requirements of the future in the global environment. This research is based on the descriptive and analytical approach, using a set of studies and research related to the research topic, as well as a questionnaire prepared for the purpose of the research.

After dealing with the general introduction to the research in the first section, the remainder of it will be divided into the following: In the second section the review of previous studies and building hypotheses will be covered, in the third section the research model and discussion of the results, and the fourth section conclusions.

## **2. Literature Review and Hypothesis Development:**

**2.1. The concept of accounting for the future:** The term “Accounting for the future” is not considered a newborn today, but rather a renewed term whose foundations have been discussed in the past in many meetings and studies, most notably the study (Pearce) in 1977, which is entitled (Accounting for the future), and the study (Hancock et al., 2009). As well as scientific conferences held over the years under the same term, including a conference for the Association of Certified Public Accountants (ACCA, 2020) (ACCA, 2019), as well as many blogs on websites that expanded with the exceptional circumstances of the coronavirus pandemic (COVID 19) that swept the world and created alternative conditions for business practices, including accounting. (NASH) believes that the concept of accounting for the future represents an accounting system for added value by estimating expected future cash flows and working on a balance between the management perspective and the stock perspective without neglecting the reality by relying on discounting the flows at a rate that reflects the cost (Al-ardi, 2009: 201).

Therefore, giving a specific definition to the term accounting for the future will not be that easy because of the diversity of issues that it covers, affects and is affected by. But a simple and comprehensive description of this term can be given in that it is an analytical intellectual brush based on accumulated historical knowledge foundations to examine the accounting reality in all its dimensions in order to give a future and forward-looking view. Because of the obstacles and

requirements that will dictate accounting practices, the treatments that will occur, and the response to those obstacles and requirements.

In a study presented by (Islam, 2017), emphasized that the accounting profession will face major changes in the next three decades, and professional organizations, their members, and educational institutions should respond. These three changes are;

- The evolution of smart and digital technology: One thing we know for sure is that technology is changing the future of accounting in business.
- The continuous globalization of reporting/disclosure standards.
- And new forms of organization are also major challenges for the profession.

The Association of Certified Accountants (ACCA) - drivers of change and future skills - has examined these important changes, which are expected to be faced by 2025. Three of them were highlighted in:

First, accountants will use increasingly sophisticated and intelligent technologies to enhance their capabilities. Traditional ways of working, and these technologies may replace the traditional approach (see "The end of the accounting profession as we know it?"). Smart software systems (including cloud computing) will support the trend towards outsourcing services (including more outsourcing), and greater use of social media via smart technology will lead to improved collaboration, disclosure and engagement with stakeholders and broader communities. Social media (including Facebook, Twitter, and Google search) will disclose more data (including alternative reporting) than any corporate assurance report and stakeholders will use tools to interpret "big data".

Second, continued globalization will create more opportunities and challenges for members of the accounting profession. While globalization encourages the free flow of funds from one capital market to another, outsourcing activities and transfer of technical and professional skills will simultaneously continue to pose threats to solving local problems (with different cultural, financial and tax regimes). Accounting firms in the United States, European Union, and Australia are outsourcing services to India and China for the purpose of reducing cost, which will create a shift in employment within the accounting industry in the West. With globalization already being negatively affected by Brexit, it is likely that accounting professionals will see themselves playing a role in this shift.

Third, the increased regulation, and associated disclosure rules, will have the largest impact on the profession for years to come. For example, regulation is imminent due to massive tax evasion, transfer pricing, and money laundering as disclosed in the Panama Papers. Many professional (tax) accountants will be affected by intergovernmental tax measures to reduce base erosion and profit

shifting. In addition, due to public pressures and stakeholder expectations, social and environmental considerations gain importance along with economic concerns in contemporary organizations. We see a range of stakeholder groups, including shareholders, workers, governments or regulators, NGOs, the media, and society have an increased interest in regulatory social and environmental issues. Due to the widespread concern of stakeholders and associated regulations towards social and environmental considerations, contemporary organizations face challenges in finding sustainable solutions to deal with the complexity of integrating financial, social and environmental performance. Totally related to this, new issues of regulation (such as "IR" integrated reporting), and (transparency of supply chain disclosure). The regulatory interest in various social and environmental issues, along with the measurement and reporting complexities associated with these issues, has allowed accounting professionals to open their minds to the possibility that accounting it has the power to change. The important meaning is that all professional accountants are expected to look beyond the numbers, which in turn will foster collaboration between members of the various professions, including accountants, doctors, lawyers, environmentalists, sociologists, etc.

Richard, (2014: 9) study identified the evolution of accounting (from static to future accounting "IFRS") in three main stages: static (1800-1870), dynamic (1870-2000) and futuristic (2000 and beyond). There are two basic reforms in relation to the previous dynamic model. The first is the possibility or even the obligation to record the potential profits resulting from the existing assets, that is, the reduction of the principle of prudence and caution, and the second, the adoption of the fair value model. He believes that future accounting imposed its hegemony at the beginning of the twenty-first century.

**2.2. Dimensions of accounting for the future:** The term accounting for the future transcends in its dimensions many determinants. The comprehensiveness of the term appears in its approach to accounting practices on the domestic and international side at the same time. And its coverage of all branches of accounting. And its interaction with all challenges that may be represented by disasters, crises, technological developments, or different environmental and social concerns or changes in the concepts of value creation or organizational trends and political decisions at the state level, and we do not forget the pressure groups in forming the most prominent of these challenges. Therefore, the accounting dimensions for the future can be identified in two basic dimensions:

- The first dimension: challenges analysis.
- The second dimension: paving roads to face the challenges.

These two dimensions will be discussed in three axes that include accounting for the future in light of the technological contributions, as shown in Figure (1).

**2.3. Technological contributions to drawing Accounting for the future:** The fields of information technology contributions varied due to the continuous development in this field, which included three main dimensions of information generation, speed of transmission and ensuring its confidentiality and reliability, which was reflected in all areas of accounting, which provided a preliminary picture of what it will be like in the future.

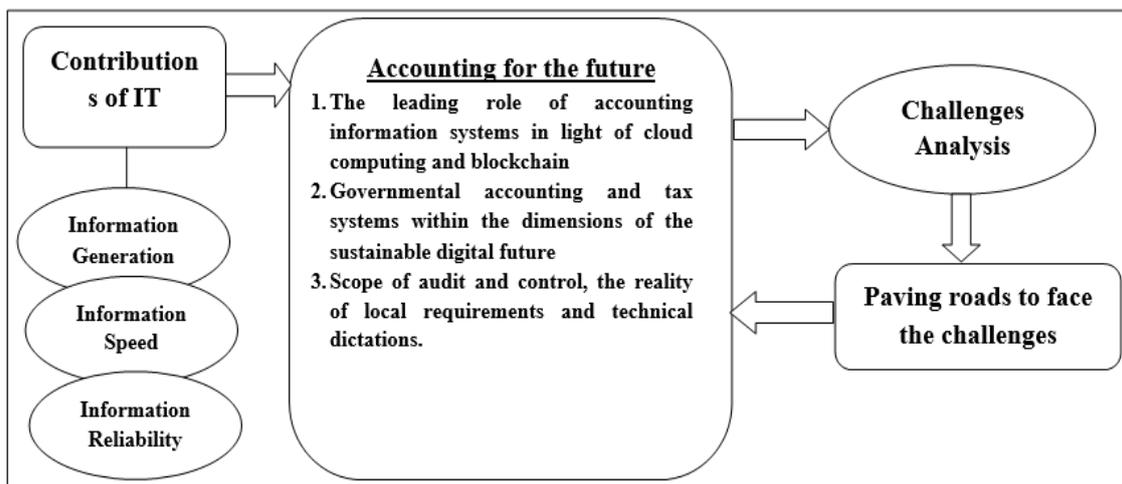


Figure (1): Research model

### 2.3.2. Leading role of accounting information systems in light of information technology:

**2.3.2.1. Challenges analysis:** This axis reflects the current and future role of accounting information systems by analyzing the main responsibilities of accountants and financial professionals. The Accounting Information System (AIS) is responsible for collecting, storing and processing financial and accounting data used in making internal management decisions, including non-financial transactions that directly affect the processing of financial transactions. In general, the accounting information system (AIS) represents a computer-based method for tracking accounting activity in conjunction with IT resources (Al-Zoubi, 2017: 1).

The current development and use of information and communication technology within organizations has a great impact on accounting information systems (Brandas et al., 2015: 89).

Moffitt & Vasarhelyi, (2013: 1) emphasized the need for accounting information systems (AIS) to accommodate business needs resulting from rapid changes in technology. The real-time economy has created a different environment for measurement, assurance and business decision. Three basic emphases were discussed related to the measurement environment in accounting, the nature of data standards for software-based accounting, and the nature of information provision, coordinated and semantic:

- Methods for measuring and representing different data processing environments have been developed.
- The necessity of substantive formalization of the application of automation and dramatic changes to the process.
- The necessity of automatic semantic understanding and natural language processing in order to demystify the representative words in the financial statements and the evaluative terms in the media.

The study (Belfo & Trigo, 2013: 538) indicated that in July 2010, the Chartered Institute of Management Accountants (CIMA) and the University of Bath in the United Kingdom conducted a large online survey of 5,426 leading financial and non-financial professionals around the world. The respondents to this study were a wide range of financial professionals, from all regions of the world, and the CIMA study showed that the latest and most important trend in the accounting profession is to shift accountants' responsibilities from traditional accounting processes to directing and supporting strategic management. This trend, as a result of the financial crisis of 2008, represents an increase in the organization's added value and the contribution made by accountants. Nowadays, large companies around the world need professionals who understand risk management, cash flow, financial tools, and other complex functions that can provide strategic guidance to top executives. The results also emphasized the need for financial professionals to remain true to the traditional duties of accounting operations. Reporting is perhaps an activity that accountants do most frequently. So accountants need to be able to produce reports in real time and interact (allowing them to choose what to put into reports, run analysis and create a scenario) without interference from the IT team. Moreover, with the recent international financial crisis, the use of AIS by external stakeholders (external reporting) has become more and more important.

It seemed clear that the new responsibilities for accountants may include administrative support derived from the 2008 financial crisis, and the Corona pandemic of 2020, which requires appropriate technological responses. On the other hand, some of the responsibilities of traditional accountants continue to pose challenges and should not be neglected. Such as accounting operations and external reporting, auditing, implementation of internal control, risk management, error or fraud detection, and accountability, among others. Many of these accounting concerns already benefit from traditional technology answers, most of them provided by enterprise resource planning (ERP) systems.

The focus here is on concerns that present challenges that still lack adequate technological responses, and thus deserve to be the focus of future research.

**2.3.2.2. Paving roads to face the AIS challenges:** Alignment between business and IT facilities remains an important concern for both business and technology managers. (Hussein et al., 2018: 11) Successful enterprises depend on the harmonization of these two worlds through their multi-faceted dimensions (communication, competency/value measurement, governance, partnership, technology scale or skills). Given the difficulty and complexity of this task, this task definitely needs new perspectives to complete, and IT, and in particular its support for AIS, has proven to have a positive impact on corporate performance and productivity. In one study, it was found that investing in AIS by small and medium enterprises (SMEs) expands the scope of work, saves time on trips and dealing with banks, central administration, etc., which reduces company costs and increases company productivity (if it is done Use innovations properly).

**Firstly. Web services and (AIS):** These services allow integration between different systems such as AIS, operating systems and web applications. Through the services available the diverse and wide Internet networks, integration of various IS can be achieved, including the integration of internet applications with AIS (Hussein et al., 2006: 130). Conclusively, it leverages external reporting and real-time reporting, usually resulting in an increased availability of information for a wide range of stakeholders, with almost complete accessibility.

The financial accounting information is expected to enhance economic performance by reducing adverse selection and liquidity risk. Also, investors and creditors who have access to high-quality financial accounting information are more rational stakeholders in making their decisions, and thus have less risk of loss or liquidity. Publicly traded organizations usually need to use online financial reporting. Besides, organizations also use their websites to compile their financial statements and other financial reports (Belfo & Trigo, 2013: 540).

For example, there are electronic reports or electronic publishing through which the company's financial information is published over the Internet. The publication process, along with the traditional annual reports, may include additional financial and non-financial information, in multiple formats. In addition, it allows providing company information in innovative ways, and in large quantities (Jones & Xiao, 2004: 238).

A large part of this external reporting effort is related to regulatory compliance. Some of these web services should allow outside entities to ensure that the company follows all necessary rules and regulations. Besides using the web as a container for financial information. There is a continuous growth in web-based accounting software services that support it. These offerings include web services and web support about accounting. The Internet of Services (IoS)

vision describes an infrastructure that uses the Internet as a means of offering and selling services that become tradable goods.

**Secondly. Blockchain and (AIS):** Changes occurring in the information technology sector can significantly alter accounting system assumptions and categories. The application of innovative developments in information technology in accounting provides the opportunity to process a wide range of information in the shortest possible time. The use of cognitive technologies not only speeds up the process of data processing and analysis, but also ensures the implementation of global trends in transparency of control, accounting and reporting. These technological requirements for transparency, quality, and a high level of information protection are in line with Blockchain technology. (Shyshkova, 2018: 62) Therefore, it is important to consider issues of systematic and technological improvement of accounting procedures in the future based on the use of (Blockchain) infrastructure. Wunsche (2016, 6) points out that Blockchain technology is the most important innovation in information technology since the introduction of the Internet. It is often referred to as "distributed ledger technology". Blockchain is one of the most important emerging technologies, and it appears to have the potential to significantly influence the areas of accounting and auditing. Essentially, Blockchain is an open and publicly shared database that tracks transactions and protects data from tampering. Once the transaction is completed, the process is irreversible and unchangeable unless (agrees or accepts) collude the majority of Blockchain users. (ALSaqa et al., 2019: 62), (Wang & Kogan 2017: 2) and one of the most important drivers of the emergence of (Blockchain) is the transactions in cryptocurrency, such as Bitcoin and others. Bitcoin is a fixed-value cryptocurrency object that is represented as a series of digital signatures across transactions. Bitcoin can be verified by examining the cryptographic validity of the signature that represents its date, while recording it using a special type of distributed ledger (Rückeshäuser, 2017: 4).

Blockchain technology provides a way to share a database between participants even if they do not trust each other, and it creates a market for transferring assets based on a peer-to-peer network without central authority (a peer-to-peer system is a network that allows data to be sent from one participant to another without Pass through a central authority). And in a peer-to-peer network system, every participant who uses a computer to access the network is called a node. Speedy, less expensive and more accurate bookkeeping systems are also attracting investment from venture capitalists, multinational bankers and regulators. (Wang & Kogan 2017: 2)

Companies, particularly in the financial industry, have begun to invest in developing this technology for other purposes. Blockchain has many beneficial commercial implications. The mere fact that it facilitates the decentralized exchange of assets is valuable. In addition, smart contracts reduce the need for intermediaries in financial transactions, such as futures contracts, guarantee payments, royalties, insurance payments, and many other contracts that involve conditional payment flows. (Coyne & McMickle, 2017: 19) While the potential impact on reporting could be that companies that use Blockchain technology have a powerful new set of reporting tools, complete with complete transactional visibility, to manage and communicate their financial condition and performance. Blockchain technology also provides enhanced transparency and access to financial and non-financial information that can significantly impact existing record-keeping, reporting, assurance and governance practices. So the systems and processes, including the controls, will take a different shape, but they will still be important and necessary (Wunsche, 2016, 16).

**Third. Mobile devices and (AIS):** Today's mobile apps are no longer buzzwords, but important resources in corporate business strategies. More companies are now adopting and using cloud and mobile computing technologies (Gupta et al. 2013: 861). Mobile phone technologies and applications affect companies' business operations, through their use in mobile payments, automatic document entry, mobile customer service, and mobile accounting service (Defelice & Leon, 2010: 50). It stores a series of sensitive and confidential data (general ledger, payroll database, and financial database), so the adoption of cloud and mobile technology requires rigorous analysis of data and application security (Brandas et al., 2015: 88).

According to a survey by Oracle of more than 3,000 mobile phone users around the world, consumers prefer to buy in the store, yet they use the mobile phone and other channels to support their shopping experiences. Also, 55% said they use or want to use banking/financial apps on their mobile phones and computers. This trend reveals the importance of mobile commerce for organizations and, consequently, the importance of integrating these systems and their performance data with AIS.

It also highlights the importance of organizations that use mobile channels to provide real-time reporting, support communication with current and potential investors, creditors, or the financial or regulatory authority, and increase the availability of information to a wider group of stakeholders and thus attract an organization. Today, there are Business Intelligence (BI) solutions, such as the Mobile-BI product, which provides business analytics and reports on mobile phones and tablets, allowing executives to track their company's performance

from the mobile phone. (Belfo & Trigo, 2013: 540) The use of mobile applications and technologies in AIS also allows the expansion of client applications in the basic financial and accounting operations of the company. Mobile payment systems and mobile phone systems to capture data in documents have the most significant impact on AIS (Brandas et al., 2015: 91).

**Fourthly. Cloud computing (AIS):** Cloud technologies can create an integrated environment where the accounting information systems of different companies can interact in the same cloud and use the same ERP easier and faster in EDI. (Brandas et al., 2015: 89) believes that the use of cloud computing services had a large and direct impact on the financial and accounting operations of organizations. this use led to a new business model, which is the cloud business model, which greatly affects the business strategies of companies, and the method in which companies do business, identify hardware, software, communications infrastructure, risk management and cost management. Through the use of cloud computing within the company, it can facilitate and activate project resource planning within the (AIS). As most transactions and reports from (AIS) are hosted in the cloud infrastructure, so one of the most important effects in (AIS) is in the hardware and software used, cloud computing provides large storage capacity and processing financial information data, and the development of custom units and applications in financial operations, accounting, marketing and human resources.

Alles, (2018: 58) indicates that the cloud computing literature related to AIS has largely failed to establish a clear role for itself in the field of accounting or cloud computing. This is largely a result of the AIS community's unwillingness to distinguish between cloud computing as an end in itself as a research subject and the cloud as a means to an end as a means of exchanging data. Al-Zoubi (2017: 1) affirms that cloud computing has affected the elements of accounting information systems represented in the accounting entity, financial operations, documents, accounting books, financial reports, users, procedures, programs, and physical devices. This is reflected in improving operational performance in terms of facilitating the completion of operations and accurate accounting processes. To make this successful, it requires:

- When applying cloud computing, the information technology infrastructure such as programs and procedures for operations and other elements of the accounting information system must be reviewed.
- Companies should apply cloud computing because of its many advantages, such as saving the costs of purchasing hardware and software, reducing the size of the organization, reducing the number of employees, speed and accuracy in completing operations and facilitating procedures.

Moudud-Ul-Huq et al., (2020: 2) emphasizes that the traditional accounting transition to cloud computing is an arrangement that can provide significant assets to business organizations, and the cloud may be put into everything from email, the organization's website, the online store to complete enterprise accounting. The impact of cloud computing is indisputable in all parts of the world, and it will provide a hypothesis for the future transformation of the financial market, and in this regard, the benefits that cloud computing can provide are broad in terms of speed, effectiveness, and efficiency of the accounting information system.

**Fifthly. Big data and (AIS):** The study (Larkin, 2020: 10) discussed the implications of the emergence of big data on accounting information systems, and stressed the importance of its inclusion in the educational curricula of the subject of accounting information systems in the near future. Given that the term big data is initiatives and techniques consisting of very diverse, rapidly developing and wide data. For regular techniques, infrastructure and skills that must be comprehensively addressed, and due to the novelty of this term as it first appeared in the year 2005. So there is a dearth of studies that dealt with its effects on the accounting profession in general and accounting information systems in particular, and in order to better understand big data, The definition is divided into three separate parts: volume, speed, and variety. Volume deals with the large amount of data that traditional data management systems cannot handle, speed has to do with the speed at which data can be processed and diversity is the different types of formats in which data may be presented. Most people should know about big data in general, as it is one of the fastest growing trends in technology, however, it is closely related and very important for those in the accounting profession to understand how it works and how it can be used to make their jobs easier. Big data uses several methods to simplify tasks in the accounting sector. There are three ways in which big data is currently being used to facilitate accountants' jobs are data-driven audits, monitoring and improving business performance and risk management.

Moffitt & Vasarhelyi, (2013: 1) indicated that there are many arguments for the necessity of formalizing the standards to be introduced in the era of providing digital information to big data, given that big data has implications for potential accounting measurements, which means the need to make adjustments in accounting standards.

Gepp et al., (2018: 102) believes that the current research on big data in accounting and finance extends over three types: (1) Financial distress modeling, (2) Financial fraud modeling, (3) Stock market forecasting and quantitative modeling.

Our literature review reveals a general consensus not to use big data in auditing. A possible explanation for this trend is that auditors are reluctant to use technologies and techniques that far outperform those of their client firms.

Moudud-UI-Huq et al., (2020: 1) notes that organizations, including accounting firms, are mostly affected by the digitization of businesses, the dangerous potential of the web, the implications of big data and the increasing importance given to information mining.

In the Iraqi environment. There are many contributions of information technology whose effects have been evident in the (AIS) for companies. Through adopting cloud computing in a specific field for some communication companies. Adopting some banking services within the mobile phone, and entering the web as a main element in the exchange of accounting information.

Based on the above, the first main hypothesis can be formulated as follows:

**(H1)** There is a statistically significant effect of the IT contributions in activating accounting information systems in the Iraqi environment.

### **2.3.3. Governmental accounting and tax systems within the dimensions of the sustainable digital future:**

**2.3.3.1. Challenges analysis:** Digitalization is often described as a major disruption facing our societies and we must adapt to it. The German Advisory Council on Global Change (WBGU) opposes this interpretation, saying that digital should be shaped in such a way that it can act as a lever and support the shift towards sustainability, thus helping and synchronizing it with it. As in 1987, when Brundtland's report, "Our Common Future," defined the concept of sustainable development, WBGU's report, "Towards Our Common Digital Future", charted the concept of a digital sustainability society (WBGU, 2019: 1).

**2.3.3.2. Paving roads to face the challenges of government accounting and tax systems:** One of the objectives of the government accounting system is to provide the necessary data for the purposes of evaluating performance by comparing actual performance with planned performance, and information to determine the extent of compliance with laws and regulations. There have also been growing trends calling for a focus on modernizing government general budget systems to shift from concern mainly on annual inputs to being approved Fundamental to the outputs and performance, by relying on the method of performance balancing, which ensures easy comparison of results with the objectives envisaged by government programs.

The process of using electronic systems in tax work in an optimal manner is one of the most important strategic options that countries take to develop tax

work by using information technology to increase tax revenues that contribute to increasing public revenues.

It can be said that the Iraqi accounting system suffers from: weak tax accounting procedures, real estate tax collection, lack of reliance on modern electronic systems in tax work. And the unavailability of an able tax cadre who is fluent in working with modern technologies related to real estate taxes. And the lack of necessary accounting information on the taxpayers (Whether they are natural or legal persons) for the purposes of correct collection and planning in order to increase the proceeds of the real estate tax, in order to achieve a flow between companies and the tax administration.

Therefore, there is the need to rely on modern electronic systems that depend on information technology, computer technologies, software, and communication networks, as well as changing legislation and laws in a manner that ensures the optimal application of the proposed electronic model of real estate taxes, and strengthening tax accounting procedures, and collecting real estate taxes using the systems. Modern electronic equipment and the preparation of capable tax cadres qualified to work on modern technologies in the field of tax work, and the importance of preparing accounting information on taxpayers (whether they are natural or legal persons) for the purposes of correct collection, and planning in order to increase the real estate tax revenue in Iraq.

Based on the most recent tax report issued by ACCA. Today's environment creates an opportunity to build systems that taxpayers understand and interact with, but what about long-term factors, such as environmental concerns, digitization and demographic change? So discuss and discover how financial professionals can help policymakers overcome these pressures to create a well-founded system. Within the Iraqi environment, government agencies have been clear in supporting sustainability trends through many areas, including not imposing a tax on imported cars that operate on electric power, which contributes to activating clean energy utilization levels, as well as that tax institutions have seemed more interested in the contributions made by technology technologies. Information in terms of tracking income tax, and processing tax returns. Based on the above, the second main hypothesis can be formulated as follows:

**(H2)** There is a statistically significant effect of the IT contributions to activating government accounting and tax systems in the Iraqi environment.

#### **2.3.4. Scope of audit and control, the reality of local requirements and technical dictates:**

**2.3.4.1. Challenges analysis:** Auditing is one of the activities that accountants usually perform, and it is usually divided into two main groups: internal and external auditing (Ismail et al., 2019: 55). Internal audit covers a wide range of

activities on behalf of the organization. Including conducting financial statements audits checking process compliance with organizational policies, reviewing the organization's compliance with legal obligations, assessing operational efficiency, and detecting and following up on fraud within the company, among other things (Belfo & Trigo, 2013: 538).

**2.3.4.2. Paving roads to face the challenges:** To understand the complex changes taking place in the audit and assurance environment, researchers must understand the technologies used in the audit environment - how they affect the audit process. (Arnold, 2018: 317) Among the most important challenges:

- The auditor realizes the benefit achieved by technological systems and programs in the audit process.
- The level of technology integration in the audit process.
- How to integrate these technological systems into the culture of the audit team and how to use these systems
- How audit teams interact with technology systems.

Internal auditors need to support their activities using information technology (IT) such as workflow management systems. The activities of external auditors are similar to those of internal auditors but focus more on laws or rules specific to an organization's financial statements rather than on operational matters. External auditors represent external parties, while internal auditors serve the board of directors of the organization. Audit firms are constantly looking for ways to increase efficiency by implementing focused audit procedures and increasingly rely on effective internal audit departments and controls. Teams are asked to participate in brainstorming meetings to identify risks arising from error or fraud, along with ways to address these risks. Therefore, auditing firms are increasingly turning to Computer Aided Auditing tools and methods (CAATTs).

Auditors also need computer-aided auditing tools and methods (CAATT) to enhance capacity and productivity. Many of these tools and techniques can be implemented at the lowest cost and with relative ease, from maximum use of standard office suite software to Audit Command Language (ACL) and Interactive Data Extraction and Analysis (IDEA) for data mining and analysis. These tools can be used to perform a wide range of analytical procedures on various financial statements including general ledger entries, payroll data, payables, and trial balance accounts to indicate outliers, miscalculations, or suspicious entries that may indicate fraud or misrepresentation.

These tools allow the implementation of the concept of continuous auditing, which allows for the continuous assessment of risks, through audit activities that identify and evaluate risk levels at the company level by examining

trends in risk indicators that depend on data within a single process or system, compared to its previous performance and other business systems. An ongoing control assessment that determines whether major controls are operating properly (Belfo & Trigo, 2013: 543-544).

Due to the steady advances in computer technology, most major accounting firms have introduced the use of artificial intelligence AI (three stages: intelligence, design, selection) in making audit judgments as part of their integrated audit automation systems. Due to the increasing and complexity of the nature of transactions, the application of audit procedures will be increasingly dependent on programs. Thus, AI and expert systems are useful and perhaps unavoidable in the current audit. Over the past two decades, there has been an ongoing effort in developing systems that rely on highly complex AI to aid auditors in making judgments. The aim of these systems is to help auditors make better decisions by paying attention to potential biases and omissions that may normally occur in purely manual decision-making processes while it is widely believed that these systems should be used merely as auxiliaries or inputs in the auditor's final determination of the results. Review due to the degree of diversity and sensitivity that such judgments require. Some results also indicate that auditors sometimes over-depend on the outputs of these systems. However, regardless of the nature of the tools and techniques that the auditor uses before reaching a specific decision (opinion), it is as with auditors who rely on other experts (such as appraisers and real estate attorneys) to create audit evidence as the basis for audit opinions, they are ultimately responsible for judgment. The AI tools that auditors adopt are simply agents who are appointed to accomplish a specific task. It is the responsibility of the auditor to ensure the suitability, reliability, and effectiveness of these tools for its purpose. Moreover, using AI-based systems to reach judgment is like a double-edged sword. The auditor may be responsible for not using sufficiently a modern decision-making aid to reach a judgment that turns out to be completely wrong. He may also be responsible for basing his judgment only on an expert system to make an incorrect judgment. So ICT devices such as Electronic Data Interchange (EDI), Electronic File Transfer (EFT) and Image Processing are gradually replacing the traditional audit paths thus completely changing the entire audit process. Despite the transformation that the auditing profession has undergone in the last century, the main topic of auditing remains to provide an independent expert opinion to a third party about the truth and fairness of the financial information provided by the management and compliance with this information with applicable accounting standards and relevant legislation (Omoteso, 2012: 8490-8492).

In the Iraqi environment, the audit firms were proactive in adopting some of the initial technical foundations for auditing companies' accounts in light of the latter's tendency to adopt electronic accounting systems, which necessitated the audit firms adopting computer and computer auditing procedures, as well as adopting auxiliary programs to track accounts and track the progress of financial operations. Based on the above, the third main hypothesis can be formulated as follows:

**(H3)** There is a statistically significant effect of the IT contributions in activating auditing in the Iraqi environment.

### 3. Research model:

**3.1. Data collection:** A questionnaire form prepared to test the research hypotheses was prepared. The forms were distributed to a number of postgraduate students (Master / PhD) and professors in ethnic universities, and the number of retrieved forms valid for analysis reached 104 forms.

**3.2. Measuring variables:** The research included two types of variables, which are the independent and dependent variables, as it included the independent variable with the contributions of information technology, which are the main factors that may affect the conceptual structure of accounting. The accounting visualizations for the future are represented by three dimensions: internal accounting information systems for companies, government and tax accounting systems, and auditing. This includes accounting at the micro and macroeconomic level and the basis for verifying its reliability.

**3.3. Results Discuss:** Table (1) shows the results of statistical analysis according to three regression equations through the contributions of information technology, the first concerned with estimating the impact on accounting information systems, the second concerned with the impact on government and tax accounting systems, and the third concerned with estimating the impact on auditing accounts.

Table (1). Three regression equations through the contributions of information technology

Scales	Variables		
	AIS	Tax & Government	Audit
<b>R</b>	0.500	0.342	0.478
<b>R Square</b>	0.250	0.117	0.229
<b>F</b>	34.001	13.482	30.279
<b>Sig.</b>	0.000	0.000	0.000
<b>T</b>	5.831	3.672	5.503
<b>Sig.</b>	0.000	0.000	0.000
<b>Beta</b>	0.500	0.342	0.478

Source: Table prepared by researchers based on (SPSS) program.

Noted from Table (1) that the best regression model is to estimate the impact of information technology in activating accounting information systems. Which reflects the perspective of the research sample views of the implications of information technology in drawing the accounting picture of the future in the Iraqi environment through the influence of different technologies generated by information technology on the elements of systems. Accounting information and the effectiveness of the relationship between those elements in moving from inputs (data) to operational processes and then to outputs (information), as well as the variation of the components of those systems from their focus on the human and physical components to the expansion of the technical components at the expense of those components. The value of (R Square) amounted to (0.250), meaning that 25% of the changes that occur in the activation of accounting information systems in the Iraqi environment are explained by information technology. It was also noticed that the (Beta) coefficient appeared with a positive value in light of the significant (T), which indicates the presence of the positive significant effect.

Whereas, in the second degree in terms of the validity of the model, the regression equation for estimating the effectiveness of auditing accounts through the contributions of information technology in terms of the value (F) of the significance. The results indicate that the sample opinions agree that information technology and its continuous developments in the generation of information, its speed of transmission and processing, and its reliability requirements may be the audit conceptual structure has assumed the necessity of adopting various new procedures that are compatible with these developments. The value of (R Square) indicates that (23%) of the changes that may occur in the activation of future audit procedures are the responsibility of IT contributions. The significance of (T) and the positive value of (Beta) confirmed that information technology had a positive significant effect in activating auditing in the Iraqi environment.

Finally, the government and tax accounting systems model was the weakest in these three rings. As the value of (R Square) reached (0.117) meaning that only 11% of the changes that occur in those systems are caused by the contributions of information technology. Which indicates that the accounting environment in the overall economy in the Iraqi environment is still in the process of taking initial steps to adopt the innovations of information technology. Which will be reflected in the image of future accounting for the government public sector, as the morale (T) and the value of (Beta) indicated that there is a positive significant impact of information technology in systems. Governmental and tax accounting.

#### 4. Conclusions:

In this research, the two researchers dealt with an expected picture of the future of accounting in the Iraqi environment in three basic areas: microeconomic accounting represented in corporate accounting information systems, the second with macroeconomic accounting represented by government and tax accounting, and the third by verifying the reliability of accounting represented in auditing accounts. The contributions of information technology within three dimensions are the generation and processing of information, the speed of its circulation and transmission, and lastly the reliability and confidentiality of the information. Information technology and the limitations of the conceptual structure of accounting in understanding it, while the second dimension deals with developments in accounting techniques and practices that are present and expected in the future, as well as the most important requirements that must be met to achieve this. As the impact of information technology in activating accounting information systems in the Iraqi environment is the largest from the perspective of the investigated, followed by activating the auditing process and finally activating government and tax accounting systems. It is possible to identify the most important issue that limits the future of accounting in Iraq with the expected future of accounting at a global level in Some of the most important points:

- The absence of an influential role for pressure groups to impose the reality of innovation in local accounting practices, whether at the micro or macroeconomic level.
- A gap between academic education and applied reality.
- A gap between the local applied reality and the accounting skills generated from this reality on the one hand, and the Arab and global applied reality and the generated accounting skills.
- A gap between local accounting education, international accounting education and the requirements of the global market.

As for the most important constraints related to the research, it is the small sample from which it is investigated, in addition to dealing with future accounting from the perspective of ignoring financial accounting, managerial accounting, cost accounting and other branches of accounting, as well as the overall test that did not address the influence of agents. The questionnaire, which can be replaced by other tools in future research.

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