

External audit of organizations in an IT environment ... Reality and Hope**التدقيق الخارجي للمؤسسات في ظل بيئة تكنولوجيا المعلومات، الواقع والمأمول****DOUIFI Houcine ¹, DRAOUCI Messaoud ²**¹ Phd Student, University of Blida 2. eh.douifi@univ-blida2.dz² Pr. Director: Laboratory of the management of local communities and their role in achieving development, University of Blida 2. m.draouci@univ-blida2.dz

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Abstract:

The external audit is witnessing an important development in line with the availability of the adopted IT systems and modern technologies. The auditing profession has increased the challenges of the modern technology environment after being shortened in the recent past in a purely traditional environment. In the IT environment, which is adopted by most institutions, it became inevitable.

The research examines the challenges of the external auditing profession in the field of IT, and aims to know the reality of external auditing Algerian companies in light of growing IT revolution. The effectiveness and consistency of the external auditor with this development, how this evolving environment has increased the efficiency of the performance of the accounting information system, the extent to which the audit methods and procedures have been improved, the velocity and accuracy of the audit work, potential and associated cost.

Key words: External audit; Information Technology (IT); Accounting System; Information system.

Jel Classification Codes: M41 ; M40.

ملخص:

يشهد التدقيق الخارجي تطورا مهما تماشيا مع توفر أنظمة تكنولوجيا الإعلام المعتمدة به والتقنيات الحديثة التي زادت مهنة التدقيق تحديات بيئة التكنولوجيا الحديثة بعدما اختصرت في الماضي القريب في بيئة تقليدية بحتة، وفي ظل بيئة تكنولوجيا المعلومات التي أصبحت تعتمد على أغلب المؤسسات فإن مساهمة المدقق الخارجي لهذا المكون الجديد أصبح حتمية.

البحث ينظر في تحديات مهنة التدقيق الخارجي للمؤسسات في ظل تكنولوجيا المعلومات، كما يهدف إلى معرفة واقع التدقيق الخارجي في المؤسسات الجزائرية في ظل تنامي ثورة تكنولوجيا المعلومات. ومدى فعالية ومساهمة المدقق الخارجي لهذا التطور، وكيف زادت هذه البيئة المتطورة من الفاعلية في الأداء لنظام المعلومات المحاسبي، ومدى التطوير في

إجراءات وأساليب عملية التدقيق، وكذا السرعة والدقة في تنفيذ أعمال التدقيق، والتقليل من الجهد والتكلفة المرتبطة بها.

كلمات مفتاحية: التدقيق الخارجي، تكنولوجيا المعلومات، النظام المحاسبي، نظام المعلومات.

تصنيفات JEL: M40، M41.

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1. Introduction:

With the development of the economic life of enterprises, the challenges facing the profession of external audit are increasing through a number of rapid developments, and the development of the IT revolution. Where the technology of automated media has entered the recording of economic events, we do not find an institution active without dispensing with the IT environment, because of the many advantages provided by this environment in terms of speed accuracy and cost. This is not provided by the traditional information environment, and because the reality of modern scrutiny is not isolated from those events and facts. However, is in constant and constant interaction with the latter, which is characterized by instability and permanence, where the challenge is increasing with the emergence of new literature in the areas of auditing and accounting. Recognizes these transformations and monitors their trends, analyses their effects and working methods and tries to keep up with them. Either in a complete or partial way for keeping up with the IT revolution after the whole world has turned into a small village open and available to those who want thanks to this revolution, so the auditing profession faces real challenges, most notably those related to the IT environment.

2. Enterprise & IT:

No institution that wants to keep up with the times and does not lag behind modernity has no choice but to move towards the electronic community and IT. And an institution that is considering ignoring the Internet in IT is similar to those considering rejecting radiology tests as a means of nursing, which is no longer possible or perceived.

2.1. What is IT:

The IT concept includes all the tools and techniques used by information systems to carry out automated exploitation activities or includes both automated

media equipment and computer physical components, automated information software (Saad, Ghalib Yassin, 2007, p. 44).

Others refer to it as 'the use of modern technologies and means such as automated media, printer, Internet, photovoltaics, cellular devices and other means in data collection, preservation, processing, distribution and transmission very quickly and accurately to assist in decision-making support, problem solving and data analysis (Khadr Mesbah Ismail Al-Titi, Hamed, 2010, p. 22).

2.1.1. IT Concept (concept and application)

The concept of IT is complex in two parts: 'technology' and 'information'.

a. Technology:

The word 'technology' consists of two parts, one of which is 'techno', which means application or practical method and the second is 'logie', i.e. science. When we combine the two parts, we have the concept of technology, which is applied science or the technical method to achieve a practical purpose. Technology points to the practical application of advanced and modern scientific methods. as these practical means often relate to new developments in processes or production. as well as influential scientific progress in various activities in which they can be used (Nadia, Abdel Jabbar, 2010, p. 13). It has also been defined as improvements in technological technical methods of production to enable economic units to increase production units with minimal resources.

a.1. Areas of use: The use of technology is focused on (Lamy Qasim Ghassan, 2007 p 36):

Product technology: which is interested in conveying ideas by providing new knowledge and ways to perform work and production through cooperation between all activities in the organization and with high efficiency

Process technology: Concerned with the methods and procedures that contribute to the performance of business within the organization, they are machines and devices that lead to the production of products or the provision of services.

a.2. Technology as an added value (Joseph Jhaim Al-Tai, Hashim Fawzi Al-Abadi, 2009, p 66) It can be focused on:

Facilitate the process of collecting, analyzing information and reaching conclusions,

- Speed in business management and completion,
- Reduce implementation procedures and steps,

- Contribute to the development of means of communication between the organization and customers and between the interests of the institution and other institutions,
- Build a database of information that the organization can rely on and refer to when needed,
- Helped to increase the number of goods provided to the market.

b. Information:

Information is defined as 'data processed for the purpose of achieving a particular goal, leading to a decision'(Amer Kandilji, 2009, p. 62).

Information is also a meaningful set of data, i.e. compiled into a task that can be useful in decision-making (Gelinass, Jr Ulric, J., Sutton, Steve, G. & Fedorowicz, Jane, 2004. P 16).

It is also defined as arranging data in useful forms (Romney, Marshall, B.& Steinbart, Paul John, 2000.p13).

By merging the two words so that we can define information technology: a combination of computers, supporting equipment, software, services and resources that are associated and applied to support the stages of work, which make digital information generated and stored easy to use and participate in (Mcnabb, Divad, 2006.p 283).

It is also defined as all the technology used to operate, transmit and store information in electronic form. It is also intended as a three-pronged merger of microelectronics, computers and modern communications media, which includes all hardware, systems and software related to the circulation of information (Salman, Jamal Dawood, 2009, p.53).

The best example of information technology is automated media, which is defined as an electronic device (not an electronic mind) that has the ability to receive, store and process data internally (i.e. make calculations and logical comparisons) automatically through a program of instructions to obtain the required results (Khashba, Mohammed Al-Saeed, 1990, p 07).

As an example of information technology and its promotion among individuals and institutions. Here we see this example below, which shows the importance of information technology to the personal level (taxpayers) as well as at the public level (state finances). By demonstrating the importance and efficacy of online tax authorization or the so-called ETax in the State of Australia:

Table (1): (ETax) Format: Paying taxes online in Australia

Benefits for citizens: - Not to come in person to the public administration and cost the trouble. -Get his treatment done faster. Government benefits: Saving the cost of publications. - Taking advantage of off-duty time to receive transactions. - Build a database of income permits automatically.	-The Australian Government's Tax Collection Division has implemented the online tax collection and income permits system based on high encryption techniques to protect the information and privacy of citizens and business owners. - The results of this service have shown that the proportion of citizens paying taxes using this system was about 940,000 in 2009 alone, more than 72% more than the previous year. This confirms the validity of the position that this service is important to the citizen. -The Collection Department has published the following facts: about the service, the collection department can handle most. eTax named at the rate of 14 days eTax tax permits across the system for authorization compared to digital processing with an average of 12 days. Course times in ordering e-service ranging from 6 p.m. to 10 p.m. -A survey conducted by the Tax Office showed that 64% of citizens who have been released from income tax using the electronic system will use the same system next year. eTax - The survey also showed that 36% of these citizens have never been in the past year. eTax them that they used the system.
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The Source: Somaya Boumerwan, e-government and its role in improving the performance of government departments, 2014 Riyadh p. 28.

This is what Algeria is currently seeking from the new electronic application in the field of remote tax collection (Télé-déclaration Fiscale Jibaya'tic) for tax collectors of the Directorate of Major Institutions DGE, as stipulated in Art 58 of the Finance Act 2018 ([www://https.jibayatic.dz](http://www.jibayatic.dz)).

2.2. Automated accounting information systems technology risks:

Despite the advantages of the Internet and electronic progress and the terrible revolution, they have revolutionized communications. information transfer and access, and the desire of enterprises to acquire and implement the latest electronic systems and software, they have made it easier for them to use automated media. It has enabled them to perform many tasks and functions faster and more accurately. However, at the same time there have been a range of important gaps and risks in the security and integration of electronic accounting systems. As the development of computers and information, technology has not been accompanied by a similar development in practices and controls. so it has

become important within any e-business organization to modify the current internal control system to suit the system of work under electronic development (Abu-Musa, Ahmad A. 2004, pp 510).

The control and protection of these risks is where the human element is the basis (Steiw, Ayman Ahmed, 2006, p.36):

- Restrictions on access to the automated information room or access to automated media.
- Install automated media, so that it cannot be moved, in locked places that are monitored if they are not turned on.
- Use of a backup power source to generate power in cases of power outages.
- Monitor access to computer-attached units, automated information room, or automated media devices and equipment located outside the automated information room.
- Adequate control procedures for setting up or nullifying physical access mechanisms (e.g. keys and badges)
- Ensure that all procedures relating to physical access are supervised & monitored by a responsible officer.

2.3. Characteristics of the electronic accounting information systems environment:

What distinguishes the IT environment is that it generally relies on automated information technology in its work. Moreover, due to the diversity of electronic information systems, a special interest is often established for automated media in large institutions. But in SMEs it is not due to the costs incurred by the enterprise in exchange for the benefits it will receive. And with the rapid development and diversity of systems has complicated the installation of these systems.

- the electronic information system can be based on more than one computer in the regions of They are separately connected to a network of communications with a particular system and are further complicated if the communications network is connected to a database in the main centre of the institution, and the complexity comes from two things (Juma, 2010, p. 185):

✚ **First:** the composition of the logical structure of the database that can take

the form of a tree, net, converted lists, or a combination of these three configurations.

- ✚ **Second:** The accounting system is highly integrated based on many explicit and implicit relationships between different data groups.

2.4. The role of IT in the dissemination of external audit reports:

IT can be used to publish audit reports for organizations, especially those listed on stock exchanges, which are usually published in newspapers and magazines, where it is easy for shareholders and interested in these institutions to follow all economic developments and events, and helps the expected decision-maker to obtain quick and complete information before making any investment decision, then the advantages of publishing audit reports include :

- The speed with which information received reports is communicated to users around the world, which increases their use.
- The cost of delivering audit reports to their users is low.
- Expand the news about the foundation and bring in a new investor .
- Find out the reaction of these reports to the company's share prices in domestic and international stock markets.

3. The reality of the auditor and the profession of external audit (legal auditor):

The auditor faces several obstacles and challenges, the most important of which is the difficulty of identifying, assessing and evaluating audit risks that are under his control when commissioning the audit of an organization operating in the accounting IT environment, due to several reasons, but not limited to:

- ✂ Lack of sufficient expertise, technical skill and basic knowledge of electronic information technology, components, functions, operational, software and audit capabilities among some auditors as a result of their stand-by in the face of this technological progress, and the lack of real and serious intention to learn and pursue this technology, which portends the delay in the auditing and accounting profession.
- ✂ Errors frequently occur and disappear as a result of the lack of users involved in data processing and electronic processes, resulting in a performance gap when assigning the task of auditing the electronic accounting IT environment.

All this increases the likelihood of making the mistake of issuing an unreserved report in the light of data and data. which does not represent the reality of the financial position of the institution. and vice versa, making the risks of external audit high. resulting in damages to the financial position of the third party beneficiaries of this report in making their decisions, and therefore the auditor is responsible as a result of his report, which does not reflect the reality of the financial position of the institution.

The difficulty of the external auditor's task is a good sign. In recent years (Fattah Hamad Abdel Fattah, 2007, p. 191), a number of financial collapses have occurred in several giants such as Enron and its collapse, with which the External Audit Office of Arthur Anderson collapsed (Ali Mahmoud Al-Khashnawi, Mohsen Nasser Al Dosary, 2008, p. 4).

3.1.Accounting financial system and information technology:

Given the significant development that has emerged on economic activity, at the international or local level, in terms of the inflation of the pace and volume of trade exchanges. and the multiplicity of types and forms of trade. Algeria has found itself in a difficult position to keep pace with the vocabulary of the global economy such as investment, international partnership and corporate branches in several countries and corporate integration as well as inflation problems... Etc., in addition to many internal domestic considerations that have prompted and urgently pushed for the reform of the traditional accounting system represented in the PCN.

A new accounting financial system in line with the requirements of the local and global economy has already been, developed from the beginning of the last decade until Law 07-11 was passed on 25 November 2007. which includes the Financial Accounting System to regulate financial accounting in Algeria (Official newspaper of the Algerian Democratic People's Republic of Algeria, n° 74 dated 25/11/2007, p 3).

Law No. 07-11 of 25 November 2007 and subsequent legislative and regulatory provisions set the legal framework. Applicable conditions and how to operate the financial accounting system that regulates financial accounting in Algeria. (Article 01, Law 07-11 of 25 November 2007). Executive Decree 08-156 of 26/05/2008 came to a more detailed detail of what the above-mentioned law has outlined.

Stating that 'the role of the conceptual framework is to identify concepts that are the basis for the preparation and presentation of financial statements.

And to draw a reference for the development of new standards while facilitating the interpretation of standards and understanding what has not been explicitly stated in the financial accounting System. As well as helping to develop standards, prepare financial statements and interpret their information and the extent to which the statements conform to the standards' (Official newspaper of the Algerian Democratic People's Republic of Algeria, n°27 dated 28/05/2008, p 11). Two decisions were then issued, the first of which was Resolution 71 of 26/07/2008 dealing with the rules of evaluation, accounting, content and presentation of financial statements as well as the code and rules of accounts, humiliated by three (3) supplements:

- Annex I sets out the rules for evaluating the accounting of assets, liabilities, burdens, products, content and presentation of financial statements, as well as the code of accounts and the rules of conduct;
- Annex II defines the simplified financial accounting system applicable to small entities;
- Annex III contains a dictionary containing definitions of accounting technical terms.

The second is Resolution 72, also dated 26/07/2008, which sets out the ceilings of the turnover, number of employees and activity, applied to small entities for the purpose of maintaining simplified financial accounting. Executive Decree No. 09-110 of 07/04/2009 set out the conditions and methods of holding accounting to the automated information system in order to achieve the total obligations and accounting principles in force.

All of these texts included an integrated package called the SCF, which came into effect at the beginning of 2010 after it was expected to be implemented at the beginning of 2009. and postponed under article 62 of Presidential Order No. 08-02 dated July 24, 2008, which includes the Supplementary Finance Act 2008.

The most prominent law on the subject of our study is the specific conditions and methods of accounting management through automated media systems.

3.2.The profession of external auditing in the IT environment:

Accounting information systems have helped to provide useful information in planning, oversight and in-entity action; in order for that information to achieve

its desired benefits, it should be accurate and appropriate (timely). The organization therefore uses automated media to run its data, because of its speed, accuracy and low operating cost and circulation, which has had a significant impact on the external audit process, as there is a need to audit data extracted by automated media in order to increase the reliability of such data (embarrassments).

3.2.1. Audit under automated processing of accounting data:

According to IAS 401, auditing the environment of information systems using automated information (the overall objective and scope of the audit process does not change in the calculated (automated) information systems environment. yet the use of automated media will change the processing, preservation and reporting of financial statements. Moreover, may affect the accounting system and the internal control system of the organization.

Scrutiny of the environment is the process of compiling and evaluating evidence to determine whether the electronic exploitation technology environment maintains assets, preserves the entire data, achieves the organization's objectives with a high degree of efficiency, and effectively uses the organization's resources (Alqubbani, Ali Thanaa, 2008, p. 223).

Therefore, the objective of the audit process under the automated processing of accounting data should focus on verifying (Latifa AlFarajani, magazine Arab, p. 4):

- Appropriate accounting information technology that provides information for the preparation of financial statements and sound reports with high efficiency.
- An effective internal control system that prevents errors and irregularities from occurring, or minimizes them.

II.2.2. External auditor and credibility of accounting information:

External auditing of accounting information is of paramount importance, by submitting its findings in the form of official reports and based on an independent technical opinion. However, as the use of information technology in the accounting system outputs increases and in order to ensure as effective as possible. There must be a clear picture of the role of all interventionists and those responsible for preparing, reviewing and using this information.

3.3. Responsibility of auditing under IT:

3.3.1 Responsibility for determining the risks of auditing under the use of IT:

The auditor's responsibility under the use of automated information software in data accounting processing includes all aspects related to this processing in terms of stages, programmers and various parties directly affecting the electronic data processing, and the auditor's responsibility under automated data processing technology can be addressed through:

- The auditor's responsibility to test electronic accounting data processing systems,
- Auditor's responsibility to automated media programs and devices.

First - the auditor's responsibility in testing electronic accounting data processing systems:

The auditor is responsible for testing the accounting data processing systems electronically, as recommended by Audit Standards Bulletin No. Twenty, issued by the American Society of Certified Public Accountants. Which is concerned with the auditor's responsibility, to identify weaknesses in the internal control system. As well as his responsibility to report on this to the management of the facility. In its text, "The auditor must inform the management of the facility of any material weaknesses in the internal control system during the examinations of financial reports, which were not addressed before their examination." The auditor must analyse the internal control system with the risk and loss analysis method. Potential and the extent to which it is necessary to establish preventive control methods for each type of risk.

Second - The auditor's responsibility towards computer software and hardware:

The taxpayer at the Data Processing Department is responsible for selecting all automated information programs used in data processing. As for the auditor. His responsibility is to verify the existence of sound procedures for approving and modifying the programs, and to ensure that users of the Finance and Accounting Department follow these procedures during audits of accounting data. Through the following steps:

- Ensure that all software modifications are documented on the software modification request form.

- Ensure that the cost of the programs is calculated accurately, and that a specialized technical committee has approved the high-cost adjustments.
- Ensure that both program developers and users of the automated information system approve the program specification form, which is a permission to prepare or modify programs.
- Comparing the modifications in the program with the program being used in data processing and which is in the library of automated information programs.
- Ensure the conformity of the program documentation documents with the documents of preparing or modifying programs.
- Audit the function of the administrator of the Automated Media Service.

3.4.Accounting audit procedures:

There are no fundamental differences between the audit of the existence. or absence of automated information in terms of the nature of the audit and the purpose of the audit, the volume of evidence, the independent auditor's report, and the main differences relate to the procedures for collecting. Tabulating and storing accounting information because this information for the computer is on magnetic cards or tapes stored within the automated media or any other means.

Which have information that cannot be read without the use of information technology. In this case, the auditor must have sufficient knowledge of the hardware, software and operating system of automated information technology in order to be able to plan an audit.

3.4.1. The External audit of the reliability of automated accounting information:

There are no fundamental differences between the audit of the existence or absence of automated information in terms of the nature of the audit and the purpose of the audit. The volume of evidence, the independent auditor's report, and the main differences relate to the procedures for collecting. tabulating and storing accounting information because this information for the computer is on magnetic cards or tapes stored within the automated media or any other means, which have information that cannot be read without the use of information technology. In this case, the auditor must have sufficient knowledge of the

hardware, software and operating system of automated information technology in order to be able to plan an audit.

- Making sure of the information and the source of the automated information system;
- Electronic lock periods, preventing adjustment after electronic authentication;
- Preparing a file showing procedures and accounting regulation in such a way as to allow the processing system to be understood and monitored (verifiability);
- Provide a manual of use of the information programme showing all its functions and objectives;
- All electronically prepared statements are strictly identical to legal and regulatory provisions;
- Show all information on printed statements;
- All electronically prepared statements are strictly identical to legal and regulatory provisions;
- Show all information on printed statements;
- Adjusting people's access to the content of the programme, distributing the programme's functions to its qualified users and recording all current events on the programme and who carried it out;
- Automated verification of the status of the programme's operation and a serial recording of all greetings and their content;

3.4.2. Electronic documentation of information under the automated processing of accounting data:

Most documentation is done electronically, so the auditor should accept written and electronic information as a documentary tool in a new form, in the light of internal control procedures that ensure the security, preservation and immutability of information. From the above, the appropriate evidence for opinion in the case of automated processing of accounting data is the following electronic evidence (Paperless electronic documents, Electronic signature, Electronic fingerprint, The system of monitoring the security and integrity of information).

3.4.3. Auditor's reliance controls on electronic evidence:

In order for the auditor to rely on electronic evidence, he or she must take into account the following:

- Be well aware that the extent to which the electronic directory can be adopted depends primarily on the effectiveness of the internal control system.
- To deal well with the continuing impact of IT on traditional evidence.

3.4.4.The impact of automated processing of accounting data on the scientific qualification and scientific expertise of the auditor:

The external auditor should have scientific and multiple experience and all aspects related to the various audits. on the one hand and on the other hand, and because of the constant increase in it demand in all areas of business, the organization is working to create integrated functions for the IT staff. so the credibility of automated data processing depends on the ability of the organization to recruit individuals or technicians with specialized experience, It has become necessary to train in how to use and deal with information technology by the external auditor.

3.4.5.Audited risk assessment in the electronic data processing environment

The study of the internal control system and the measurement of the degree of risk is the starting point. And before planning the audit process, and in accordance with international audit standard 400. the auditor must assess the fundamental risks and control risks of physical aspects of physical data in the electronic Information technology environment, because they may have a general or special potential impact on the fundamental errors of financial statements, for example:

- Errors of programmed staff (software setter, hardware player, system user).
- Faulty hardware and software (software, maintenance, hardware).
- Fraud and manipulation (file sources, spyware, software modification, viruses).
- Disappearance of physical records: Under electronic exploitation technology systems using automated media, registration and data preservation are carried out using electronic pulses in the computer's main memory or on magnetic and compressed disks that are impossible for a person to read and the only one who can read them is the computer and therefore accounting data has become invisible.

- Data problems: Problems with electronic data processing are often attributed to two reasons:
 - Programming errors: Errors in the writing and design of the software lead to incorrect processors,
 - Along with input errors: where is this when incorrect data is entered, resulting in incorrect processing and therefore results that are not identical to reality or what is required.
- Problems related to the scientific and practical qualification of accountants: Accountants face many problems in working life in light of the tremendous development of IT.

In light of this, the account portfolio sets out the procedures to be taken into account to gather appropriate evidence when using the electronic accounting institution rather than the manual system in its work.

4.Barriers and prospects for external auditing in the IT environment:

The shift from manual auditing to electronic audit technology has become imperative to advance the audit profession and enter the IT revolution. Moreover, this change in method has led to different audit methods and procedures, noting that the general objectives of auditing do not change whether the functions under scrutiny are automated or not. As the use of automated media, technology changes the way information is processed and preserved and the methods and procedures followed by the auditor to collect evidence.

4.1.Educational auditor problems under automated accounting systems:

Institutes, universities and vocational training centres are the main source of teaching and training of auditors in Algeria in the absence of a institute or school for auditors. The development of education in information technology auditing is all the more important because of the ongoing developments of the latter. With the implementation of auditing functions and the risks involved, the scientific and professional training of the auditor in Algeria is surrounded by a range of challenges and obstacles, which can be summarized at the following points:

- The student community in Algerian universities has swelled beyond capacity.
- Lack of interest in training students professionally. And practically to keep up with working life.
- The short period of classes in Algeria compared to developed countries.

- The lack of Algerian standards to guide the auditor who is in the background check for electronic accounting information technology.

4.2. Cloud computing technology audit:

The world has recently been moving towards adopting and implementing cloud computing technology, and instead of computing and storing enterprise data centers, it can be conducted in data centers provided by external service providers, known as cloud computing.

Table (2): the main differences between computing in the organization's data center and cloud computing:

<u>Future: Cloud Computing</u>	<u>Currently: Computing in the organization's data center</u>
Services	Applications, services, devices
Subscription-based	License-based
Operating expenses	Capital expenditures
Applications	Styles/models
Use	Running, maintenance, upgrade, detecting malfunctions, repairing
Use	Build, install, strengthen, cool* data center
Entitlement	Based on capacity
Pay for operational capacity exploited as a variable cost	Pay for operational capacity used as a fixed cost

The Source: AICPA, n.d. System and Organization Controls: SOC Suite of Services. [Online] Available at:

https://www.aicpa.org/interestareas/frc/assuranceadvisoryservices/sorhome.html?_ga=2.267140238.1251422042.1519287230-1164712656.1519287230

Benefits of cloud computing: The benefits of CC include:

- 'Pay by use', it is relatively easy to raise or reduce exploitative capacity according to work requirements.
- Providing services online and therefore accessible anywhere, anytime.
- Additional capacities and functions can be obtained as needed.

Cloud computing models (Grand Thornton LLP, **Risk & Rewards: Social Media and the Cloud**. 2014. [Online] Available at: http://agabaltimore.org/wp-content/uploads/2015/09/Risks_and_Rewards_of_Social_Media_and_the_Cloud.pdf):

- Software as a Service SaaS software service is a software application that is provided online.

- Platform as a Service PaaS is a full or partial operating system and a development environment provided online.
- Infrastructure as a Service IaaS is a technical infrastructure service provided online.
- Business Process as a Service BPaaS is a form of outsourcing of corporate operations based on cloud computing.

5. Conclusions:

Through this research, we can draw the following conclusions and recommendations:

• Results:

- Training auditors in the use of information technology in the audit process leads to the triggering of their skills and knowledge, thus helping to improve the quality and effectiveness of external auditing.
- The scientific and practical qualification of the auditor in the IT environment for financial buildings differs from the scientific and practical qualifications of the auditor under the reduced system, while the auditor's behavioural diarrhea is still the same.
- Information technology has improved audit procedures and methods, without affecting their objectives.

6. Recommendations:

- Separation of tasks to facilitate the control of the accounting information system,
- Support for audit monitoring makes it easier to correct errors when detected,
- Speeding up the application of electronic audits, as they have a profound impact on improving the quality of external auditing,
- Develop software protection systems and identify only licensed users to exploit them,
- Set up software that enables the auditor to detect errors during the audit process,
- Mandatory scrutiny of audit risks and the possibility of avoiding and addressing them,
- Work to select experienced and competent auditors to achieve a successful

review process,

- Develop software protection systems and identify only licensed users to exploit them,
- Continuous greetings on audit methods and the use of information technology to improve the efficiency and effectiveness of the audit process,
- Set up software that enables the auditor to detect errors during the audit process.

7. Bibliography List:

1. Books :

- Saad Ghaleb Yassin, 2007, Essentials of Management Information Systems and Information Technology, Dar El-Manahidj, Ed1, Jordan.
- Khader Mesbah Ismail al-Titi, 2010, Essentials of Project Management and Information Technology, Dar Hamed, Ed 1, Jordan.
- El Lamy Qasim Ghassan, 2007, Technology Management, Dar Al Manahidj for Publishing and Distribution, Amman Jordan.
- Yousef Jhaim Al-Taie, 2009, Hashim Fawzi Al-Abbadi, Electronic Marketing, Al Warraq Publishing and Distribution, Amman Jordan.
- Amer Kandilji, 2009, Sources of Technical and Electronic Information, Al Yazouri Scientific House for Publishing and Distribution, Amman Jordan.
- Salman Jamal Dawood, 2009, Knowledge Economy, Al Yazouri Scientific House for Publishing and Distribution, Amman.
- Khachaba Mohammed Al-Saeed, Essentials of Automated Media, 1990, Al Waleed, Cairo.
- Ahmed Helmi Juma, 2010, studies and research in auditing and confirmation.
- Ali Al-Qabbani Thanaa, 2008, review of data operating systems, Campus Alexandria, Egypt.
- Somaya Boumerwan, e-government and its role in improving the performance of government departments, 2014, Riyadh.
- Gelinas, Jr Ulric J. Sutton Steve G. & Fedorowic Jane 2004, Business Processes & Information Technology, South –Western United States of America.
- Romney, Marshall, B. & Steinb.art, Paul John, 2008, Accounting

Information Systems, 8t, Pearson Prentice Hall, United States of America.

- McNabb, Divad, Knowledge Management in the Public Sector 2006, M. E. Sharpe, United States of America.
- Latifa Al-Farajani, 2013, Audit under the processing of accounting data, magazine Arab Accountant, Dar Al Safa Publishing and Distribution, Amman Jordan

2. Theses:

- Nadia Abdel-Jabbar Mohammed, 2010, the requirements for the application of information and communication techniques and their role in promoting accounting and internal control systems, letter introduction to the College of Management and Economics, University of Baghdad.

3. Journal article :

- Abu-Musa, Ahmad A. (2004), Important Threats to Computerized Accounting Information Systems: An empirical Study on Saudi Organizations Public Administration, a Professional Quarterly Journal Published by The Institute of Public Administration Riyadh, Saudi Arabia, (Vol. 44, No. 3).
- Shtiwi Ayman Ahmed, Sept. 2, 2006, measuring the impact after the industry on the role of the external auditor in the risk management associated with automated accounting information systems, Alexandria University, Faculty of Commerce for Scientific Research.
- Mohamed Abdel Fattah, 2007, a proposed framework for achieving the objective of the auditor's report in the light of profit management practices - field study, magazine of accounting thought, Faculty of Commerce, Ain Shams University, Ain Shams University.
- Mahmoud Al-Khashnawi, Mohsen Nasser Al Dosary, 2008, Creative Accounting and the role of the auditor in checking their practices and results, the ninth research contest at all sectors of the Accounting Bureau, Kuwait.

4. Internet websites:

- AICPA, n.d. System and Organization Controls: SOC Suite of Services.

[Online] Available at:

https://www.aicpa.org/interestareas/frc/assuranceadvisoryservices/sorhome.html?_ga=2.267140238.1251422042.1519287230-1164712656.1519287230.

- Grand Thornton LLP, Risk & Rewards: Social Media and the Cloud, 2014. [Online] Available at: http://agabaltimore.org/wp-content/uploads/2015/09/Risks_and_Rewards_of_Social_Media_and_the_Cloud.pdf.