



## Accounting Information Technology and its Role in Raising the Level of Professional Performance of Internal Auditing

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### Abstract:

This research aims to know the role of information technology in improving the performance of internal auditing, by highlighting the obstacles facing the use of information technology during internal auditing and understanding the extent of the internal auditor's awareness, Due to the importance that provides in improving audit services and explaining its role in providing accurate results and large information with high efficiency, in addition to the impact of information technology in reducing internal audit risks as a result of the large size of economic units and the diversity of their legal forms due to the great development occurring in all economic sectors. This led to the need for the internal auditor to provide services with the highest quality, one of the most important results that were reached is that information technology works to improve auditing procedures and reducing the risk by monitoring the computer performance daily with operational activities and confidentiality of information and the inability to access important information for unauthorized persons. Among the most important recommendations is the necessity for internal auditors to be Awareness of the importance of this technology when performing auditing services and reducing the risk when monitoring computer performance daily with operational activities, the confidentiality of information, and the inability to access important information except for authorized persons. The research concluded that the hypotheses are correct.

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### Introduction

The world has witnessed great development in the field of information technology which has included all fields, sectors, and institutions. Economic units at present are living in the era of the information and knowledge revolution, which has led to a reduction in the effort exerted by the auditor about the auditing operations conducted on the data to extract the results, in addition to increasing the focus on quality, Information systems play a major role in managing any economic unit, regardless of its size, objectives, sector, and market in which it operates. Developments have contributed to the size of the competition, as the nature and method of entering and processing data in producing information have changed, through the exchange of information with senior management, with employees among themselves, and with stakeholders, where the computer was used to process important services and overcome the problems facing the auditor, especially in large institutions, and reduce the cost, auditing and increasing accuracy and comprehensiveness of accounts. Processing by electronic method of auditing does not change the essence of the audit but affects the processing and storage of accounting data. Information technology plays an important and influential role in the process of improving the performance of internal auditing, as the known auditing

procedures and methods are no longer compatible with the auditing process when data is processed electronically, in which information systems are High speed and accurate, thus improving the internal auditing process and raising the efficiency of performance.

### **The first topic: research methodology**

#### **First: Research problem**

As a result of the great development taking place in all the different economic sectors the large size of economic units and the multiplicity of their legal forms, all of this has led to an increase in the use of information systems, which resulted in the need for the internal auditor to provide services of the highest quality and at the lowest cost, the research problem can be formulated with the following questions:

- 1-Does accounting information technology have a role in providing accurate information in great abundance, in a short period, and at a lower cost, thus raising the level of professional performance of internal auditing and reducing risks?
- 2-Does the use of accounting information technology face problems in the internal audit process?
- 3-What is the relationship between information technology requirements and raising the level of professional performance of internal auditing?

#### **Second: Research objectives:**

The research aims to know the role played by information technology in improving the performance of internal auditing through the following:

- 1-Knowing the extent of the internal auditor's awareness of the importance of using information technology in improving audit services.
- 2-Determine the role of information technology in reducing audit risks and identify the problems facing internal audit when using it.
- 3-Demonstrating the role played by information technology in providing accurate results and great information at the lowest possible cost.

#### **Third: Research hypotheses**

The research is based on the following basic hypotheses:

- 1-There is a role for information technology in providing accurate information in great abundance, in a short period, and at a lower cost, thus raising the level of professional performance of internal auditing and reducing risks.
- 2-There are many obstacles facing information technology when used in the internal audit process.
- 3-There is a link between the regulatory requirements for information technology and improving the performance of internal audits.

**Fourth: The importance of the research:** The importance of the research stems from the extent of the impact of accounting information systems technology in raising the level of professional performance of internal auditing and developing auditing procedures to obtain high-quality auditing results at a lower cost and overcome the problems suffered by manual auditing.

### **The second topic**

#### **Cognitive foundations of accounting information technology**

##### **First: The concept of the accounting information system**

The accounting information system is one of the basic systems in the economic unit, although it has become traditional and the information technology currently in use is the

accounting information system, as many modern technologies have been used when carrying out accounting information system operations, Therefore, it needs to develop its control procedures as one of its important components that prevent errors from occurring in it and help in discovering them. The accurate and efficient accounting information system is demonstrated by its ability to assist business organizations (Awad, 2015: 30).

Several definitions have defined the concept of the system. The most important of these definitions is that it is a group of two or more elements or subsystems linked to each other that aim to achieve a specific goal (Issa, 2013: 10). Information systems are considered one of the main resources of economic units because it contributes to transforming inputs into outputs, which makes it an important resource that can provide and develop essential capabilities that give the economic unit competitive advantages (Matta, et.al, 19:2005). Information systems represent a group of resources and components that are interconnected in an organized manner to produce useful information that allows for the processing, storage, and delivery of information to users in an appropriate manner and at the appropriate time to help them perform the tasks assigned to them. (Al-Mutairi, 2012: 11).

The information system is also one of the main resources for economic units, as it contributes to transforming inputs into outputs and provides local or international customers with necessary goods, which makes it one of the distinguished resources, and it can develop capabilities that give the organization competitive advantages that are not found in economic units (Matta, et al, 2001: 934). The system was also defined as a set of steps, procedures, methods, and ways that aim to collect, organize, summarize, store, analyze, and retrieve data to obtain useful information that contributes to decision-making by its users (Sharida et al., 124:2021).

#### **Second: System elements:**

The system consists of integrated elements and parts that achieve its goals, which are limited by a specific framework and interact with each other according to a set of procedures and rules to achieve specific goals (Al-Saqa, 2016: 22). The following are the most important elements: (Al-Shawabkeh, 2011: 72):

1-Inputs: These are the elements that the system obtains from the environment in which it exists, which enable the system to carry out the activities necessary to achieve its goals. These elements include raw materials, energy, and individuals.

2-Processing: This is the collection of activities required to be completed to convert inputs into outputs.

3-Outputs: These are the results extracted from processing the inputs.

4-Feedback: This is similar to self-control and monitoring to ensure the effectiveness and efficiency of the system in achieving its goals.

#### **Third: The concept and definition of accounting information technology**

There are many meanings and terms for information technology, which are computerized information systems, information technology, electronic computer system, and other terms (Harz Al-Awi, 2019: 11). The need for organizations interested in developments taking place in the current environment has called for employing advanced and modern technology no less than what prevails in the environment of surrounding organizations. Because of this, this term has spread widely, and everyone seeks to make the most of the use of this advanced technology. (Asim et al., 2013: 232). Information technology has been defined as systems that rely on advanced technology to provide information to concerned parties in the fastest time and with the least effort and cost, and the design or support of computer-based information systems. (Zaqout, 2016: 58).

While information technology is known as the science of introducing electronic machines to build advanced computer systems to improve the management of material and human resources (Shaqiri, 2015:166), it is also known as a set of tools that are used to help in receiving and retrieving information as well as processing it using a computer. and communication networks (2018:132, al et Ainous).

#### **Fourth: Components of accounting information technology**

Accounting information technology is one of the most important systems used by economic units, which requires a set of hardware components, programs, and databases, which can be classified into four sub-technologies, which are: (Al-Lami et al., 2009: 19).

1-Physical components: They are electronic devices whose function is to store, analyze, and send data according to orders issued to carry out tasks. They are electronic devices designed in a way that works to receive a large set of data automatically for storage and processing and the possibility of converting that data into useful information that can be used as needed according to Special instructions called programs (Shelly et, 2010:4).

2-Software: One of the most important basic components of information technology, as it is generally divided into two types: operating software and application software. They are essential in operating the computer as they are a series of programs manufactured for the computer by the company that works to organize their relationship with each other. As for application software, they are independent and ready-made programs. It is designed in a way that facilitates the completion of the work of administrative and economic units, and it consists of a group of divisions represented by text processing, spreadsheets, and a database management system. (Riyad, 2018: 25).

3-Human Resources: It is one of the main components represented by the need for scientifically and practically qualified employees who can perform ICT work. Human resources represent the workforce specialized in creating and delivering ICT services to organizations.

4-Databases: A group of data that is interconnected with each other in a typical way, to facilitate dealing with it, retrieving it, and processing the data. (Al-Bahnasi, 2008: 508).

5-Networks: It is a package of electronic links extending across the communication fabric of Internet networks, on the administration's communication network, carrying the database and information on which the administration's work is based, such as laws, decisions, and projects. (Al-Hassan, 2010: 71).

#### **Fifth: The importance of information technology in auditing**

The use of a computer when performing various audit operations helps reduce time in clerical and accounting operations, as well as reducing audit costs (Khaled, 2017: 100). In the field of auditing, the use of information technology can achieve the following things: (Al-Thunaibat, 2010: 325):

1-The emergence of what is called computerized systems auditing, as a result of the increasing development in information technology, and the increased interest in it through the issuance of standards to guide auditors regarding this field.

2-When professional judgment is exercised, some human shortcomings are overcome, Which leads to improving the efficiency and effectiveness of audit work.

3-Sometimes the auditor uses a special program for the process of conducting tests and forming his own opinion, which helps him in making his decisions. This program is called Expert Systems.

4-When the auditor uses a program for storing and retrieving information and analytical auditing programs using information technology, this enables him to perform comparison and analysis between actual and planned numbers. (Al-Batta, 2016: 24).

5-Achieving an effective system that has an impact on the accuracy and credibility of information (Zaqout, 2016: 59).

#### **Sixth: The effect of using information technology in reducing audit risks.**

Economic units have come to consider information technology as one of the most important means they use in their operations. Auditing has witnessed widespread growth in information technology in those economic units, as a result, what is called computerized systems auditing emerged (Khaled, 2017, 87). Information technology has an impact on the accounting auditing profession by reducing audit risks in the field of internal control, in terms of improving control and auditing through the following: (Harz Al-Lawi, 2019: 47 )

1-The main advantage of information technology is to monitor computer performance daily, with operating activities replacing manual labor with programmed controls, enabling each element to be verified and matched to reduce human errors that can occur in manual systems.

2-Information technology provides management with fast, high-quality information, thus reducing audit risks.

3-Computers and electronic devices create documents that differ from paper documents, This difference lies in the difficulty of modification and forgery, as well as its sufficiency to prove its credibility, clarity and ease of use.

#### **Seventh: Advantages of using information technology in the field of accounting information systems**

The use of computers in accounting work is very necessary because of what the nature of the work requires on the one hand and the advantages and benefits that the computer achieves on the other hand, these advantages can be summarized as follows: (Ramli, 2011: 92)

1-Accuracy and speed in preparing documents and performing calculations.

2-Improving the processes of collecting, storing, and retrieving books and records in the form of information for managing the economic unit.

3-Increasing confidence in the information resulting from operation on the computer and displayed in reports.

4-Tightening internal and self-control over the implementation of operations so that risks and errors can be reduced in the operation phase.

5-It helps provide complete flexibility in designing accounting information systems by storing and retrieving information at the appropriate time.

6-Speed in completing similar operations, recording the largest number of accounting operations, and using the least number of individuals.

#### **The third topic:**

#### **Cognitive foundations for internal auditing and performance improvement.**

##### **First: The concept and definition of internal audit.**

Economic units rely on internal auditing as one of the important functions. The Institute of Internal Auditors (IIA) has defined internal auditing as an independent, objective, and advisory activity designed to improve the operations of economic units and increase

their value, as it helps them reach their goals through an organized methodology for developing and evaluate the effectiveness of risk management, as well as to help it control, rationalize and manage its operations (Arens, et, al, 2012: 816). The Committee of Supporting Institutions (COSO) also issued a definition of internal control as a process carried out by the unit's management and is designed to provide reasonable assurance regarding the achievement of the objectives set by the committee in its report. (COSO, 2006, 1).

### **Second: General objectives of internal audit.**

The goal of internal audit has become to develop management processes and help it perform its work correctly, and it is not limited to examination and analysis to discover errors (Sabbar, 2012: 76). Therefore, the main role of internal audit must be clarified through the modern concept of auditing, which is to help the economic unit, to add value and improve its work through evaluating internal control systems and recommendations that are directed to addressing any deviations, improving work procedures, and increasing the efficiency of systems and operations, provided that its objectives are consistent with the objectives of the economic unit, which are as follows. (Al-Ramahi, 2017: 24):

- 1- Evaluating the plans and policies established and administrative policies by senior management, expressing an opinion, analyzing deviations, and submitting suggestions.
- 2-Verify that there is adequate protection for project assets against theft.
- 3-Evaluate the economic efficiency of using resources and assets.
- 4-Raising production efficiency by proposing appropriate adjustments.
- 5-Ensure that established policies and procedures are followed and adhered to.
- 6-Preserving the funds and resources of the economic unit, protecting them from embezzlement and misuse, and verifying the accuracy of accounting data.

### **Third: Audit objectives in light of the use of information technology**

In light of the use of information technology, the audit objectives are as follows: (Zaqout, 2016: 73):

- 1-Ensure the effectiveness of internal control of data, electronic devices, and device connection networks from access by unauthorized persons for copying or modification.
- 2-Ensure that all financial transactions, electronic records, reports, and files are processed accurately and in an integrated manner.
- 3-Ensure that the economic units own the programs and develop them, and all of this is done according to the management's mandate.
- 4-Ensure that data containing errors is highlighted and that it is processed by management policies.
- 5-Ensure that all files of the electronic accounting information system are characterized by accuracy, completeness, and speed.

### **Fourth: Auditing in light of electronic data operation**

The rapid progress in information technology has imposed challenges on the auditor. Among these challenges is the necessity of changing his way of thinking and his view of the variables surrounding him, and developing his performance for the better by taking advantage of those variables. This matter brought about a fundamental change in the auditor's methodology, as follows: (Al-Saidi, 2006: 106) 1- Change the auditor's knowledge and culture through familiarity with the basics of electronic data operation.

- 2-Reconsider the audit plan and program.
- 3- Reconsidering the nature of evidentiary evidence, and making use of computers and operations research methods.
- 4-Reconsidering the methods of preparing and presenting audit reports in line with the latest developments.

**Fifth: Positives when using information technology**

The use of information technology brings many benefits to internal control (Al-Tanbour, 2020: 79).

- 1-Providing timely information and increasing the accuracy of information.
- 2-Increasing the quality of information and its impact on administrative decision-making in a way that achieves optimal exploitation of available resources.
- 3-Reducing the risk of regulatory procedures
- 4-Running the largest possible number of transactions in the shortest time and at the lowest cost, and eliminating diagnostic and accounting errors.
- 5-The possibility of storing data in electronic files.

**Fourth topic**

**The applied aspect**

To develop hypotheses in formulating the questionnaire for the research sample, which included a selected group of specialists in the work of internal auditing and academics who have sufficient experience in the field of auditing, personal interviews were conducted with a group of auditors and we benefited from these interviews, as they were selected appropriately based on specific characteristics in The research sample to reach the correct results, as shown below:

**First: The research sample was divided according to gender**

By reviewing the table below related to the classification of auditors by gender, we noticed that the number of males sample is greater than the number of females. The reason is that the number of males who work in the auditing profession is greater than the number of females, as shown below:

Table (1) Study sample by gender

Gender	Repetition	Percentage
Males	70	75.3%
Females	23	24.7%
the total	93	100%

**Second: The research sample was divided according to age**

The table below shows the study sample distributed according to age groups similarly, with an increase in age groups from (26) to (45), which confirms the credibility of the study results:

Table (2) Study sample by age

Age	Repetition	Percentage
Under 25 years old	10	10.8%
From 26 years to 35 years	33	35.5%
From 36 years to 45 years	30	32.2%
Older than 45 years	20	21.5%
the total	93	100%

**Third: The research sample was divided according to academic qualification**

The table below shows that the largest percentage in the study sample was (38)% for the academic qualification of a bachelor's degree, (32)% for a master's degree, (10)% for a diploma, and (13)% for a doctorate.

Table (3): Study sample according to academic qualification

Academic qualification	Repetition	Percentage
Diploma	10	10.8%
B.Sc	38	40.9%
Master's	32	34.4%
Ph.D	13	13.9%
The total	93	100%

**Fourth: The research sample was divided according to years of service**

Table (4) shows that there is a diversity of experiences of the study sample in the field of auditing, which included highly experienced auditors and newly experienced auditors.

Table (4): Study sample by years of service

Years of Experience	Repetition	Percentage
5 years or less so	7	7.5%
From 6 years to 10 years	34	36.6%
From 11 years to 15 years	25	26.9%
From 16 years and over	27	29%
the total	93	100%

**Fifth: The research sample according to the use of information technology to improve the performance of the audit process.**

The research sample was characterized by (73.1)% who confirmed that IT contributes to improving the performance of the internal audit process and that their answers were based on understanding, knowledge, and experience based on their work practice in the auditing profession. The remaining percentage, which is (26.8)%, did not support it for reasons related to It being difficult to move from the manual system to electronic systems.

Table (5): Study sample according to the use of information technology to improve the performance of the audit process.

Improving the performance of the audit process through the use of information technology	Repetition	Percentage
Yes	68	73.1%
No	25	26.9%
The total	93	100%

**Sixth: The research sample according to the use of information technology in reducing audit risks.**

It was revealed through the questionnaire process that was conducted On the sample that the use of IT has a role and influence in identifying and reducing audit risks. It was shown that speed in collecting and analyzing data and its accuracy contribute to reducing audit risks. This was noted in the table, where the confirmation rate was (78.4)% on the role of IT in reducing audit risks.



Table (6): Study sample according to the use of IT in reducing audit risks.

Reducing audit risks through the use of information technology	Repetition	Percentage
Yes	73	78.5%
No	20	21.5%
The total	93	100%

**Seventh: A sample of research on the use of information technology in providing accurate results and extensive information with the highest efficiency and lowest cost.**

The research sample showed that information technology has great benefits in providing information to beneficiaries in large quantities, with high accuracy, and at great speed, which leads to improving the performance of the internal control process as a result of the ability of electronic devices to collect, process, and analyze data.

Table (7) Study sample on the use of information technology in providing accurate results and extensive information Lowest cost and highest efficiency.

Using information technology to provide accurate results and extensive information Lowest cost and highest efficiency	Repetition	Percentage
Yes	85	91.4%
No	8	8.6%
The total	93	100

**Eighth: The research sample on the use of information technology helps to better distribute tasks to the audit team.**

It is clear from the study sample shown in the table above that the use of IT leads to an accurate distribution of work tasks among the audit team and the defining of the responsibilities assigned to each auditor, which leads to achieving accuracy in the work.

Table (8): A sample study on the use of information technology helps distribute work to the audit team better

The use of IT helps to better distribute tasks to the audit team	Repetition	Percentage
Yes	70	75.3%
No	23	24.7%
The total	93	100%

**Ninth: Research sample on the possibility of accurately comparing similar financial ratios through the use of information technology in the internal audit process**

The use of IT in auditing has a role in the process of making a comparison between the financial ratios of economic units with the financial ratios of similar economic units, which generates quick results, in large quantities, and at a lower cost, in addition to the ability to easily view the audit process papers for previous years.

Table (9): Study sample on the possibility of accurately comparing similar percentages.

The possibility of accurately comparing similar financial ratios through the use of IT in the internal audit	Repetition	Percentage
Yes	71	76.3%
No	22	23.7%
The total	93	100%

**Tenth: Research sample on obstacles to using information technology.**

Despite the advantages that IT has the performance of the internal audit and reducing audit risks, the process of transitioning from the manual system to the electronic system

takes into account a set of obstacles that must be addressed in the planning process and knowing the requirements for the transformation.

Table (10): Study sample on obstacles to using information technology.

Obstacles to the use of information technology	Repetition	Percentage
Yes	65	69.9%
No	28	30.1%
The total	93	100%

**Eleventh: Research sample: The absence of laws and legislation requiring the use of information technology in the internal audit.**

The lack of laws and legislation obligating auditors to use information technology leads to taking advantage of information technology in arriving at accurate results quickly at a lower cost and identifying audit risks. This is one of the most important obstacles that economic units suffer from in the internal audit process.

Table (11): Study sample about the lack of laws and legislation requiring the use of IT in the internal auditing.

The lack of laws and legislation requiring the use of information technology in the internal auditing	Repetition	Percentage
Yes	84	90.4%
No	9	9.6%
The total	93	100%

**Twelfth: Research sample about the lack of sufficient training for the auditor to be able to use information technology in the internal auditing.**

Through observing the audit sample, it was revealed that one of the obstacles to the use of information technology is the lack of training of auditors in a way that makes the auditor capable of using information technology, in addition to the auditors' accustomed to manual auditing systems, which prevents the use of IT in the internal auditing.

Table (12) The lack of sufficient training for the auditor to enable him to use information technology in the internal auditing.

The lack of sufficient training for the auditor to enable him to use information technology in the internal auditing	Repetition	Percentage
Yes	71	76.3%
No	22	23.7%
the total	93	%100

**Conclusions and recommendations**

**First: Conclusions**

Through what was presented in the cognitive foundations and through the analysis of the questionnaire, the results that were reached can be summarized as follows:

1-There is great importance for information technology and its role in improving the internal audit process, through the awareness of internal auditors, as a result of its use it can provide the completion of the audit process very quickly, improve the accuracy of information, reduce the cost of auditing, and increase effectiveness and efficiency.

2-Information technology is important in development the performance of the audit and reducing its risks by monitoring computer performance daily with operational activities, confidentiality of information, and inability to access important information to unauthorized persons.

3-The lack of sufficient experience among most auditors, in addition to the habit of using manual systems, prevents the use of technology. Therefore, it is considered one of the obstacles that prevent the use of computerized systems.

4-Overcoming some human shortcomings in auditing accounts by storing and retrieving information, analytical programs, and quickly making comparisons between actual numbers and planned numbers.

5-In the case of applying information technology, the auditor is required to be familiar with the electronic operation policy, which requires conducting training and development in auditing capabilities and working to prepare appropriate plans for auditing by the requirements of modern developments.

6-The lack of laws and legislation requiring auditors to use information technology is considered one of the obstacles to the transition from manual systems to electronic systems, as auditors become accustomed to manual systems.

### **Second: Recommendations**

Through the research process and the conclusions reached, we recommend the following:

1-The need for internal auditors to be aware of the great importance of IT and its role in improving the internal audit process, as a result of its use can provide the completion of the audit process very quickly, improve the accuracy of information, reduce the cost of auditing, and increase effectiveness and efficiency.

2-The need for internal auditors to be aware of the importance IT in improving the performance of audit work and reducing risk by monitoring computer performance daily with operational activities, the confidentiality of information, and the inability to access important information except for authorized persons.

3-Professional organizations in Iraq hold practical training courses for internal auditors in private and public economic units to train them on how to use information technology, which makes internal auditors capable of using advanced systems, whether in the process of planning, analysis, or comparison.

4-The need for the authorities concerned with matters of oversight and auditing to issue laws and legislation that obligate auditors in public and private economic units to use IT in the internal audit process.

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