



Birzeit University

The Impact of Information Technology on Auditing Accounting

Information Systems: the Case of Palestine.

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Supervised by: Dr. Nidal Sabri

**Faculty of Graduate Studies
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August, 05**



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The MBA Program

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أثر تكنولوجيا المعلومات على أساليب تدقيق النظم المحاسبية

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Abstract:

This study aims to investigate the impact of IT on the auditing profession in Palestine. The main objective of the study is to scrutinize the importance of IT to auditors in Palestine, and to compare this importance between local auditing firms and international auditing firms.

To gather relevant data, a questionnaire of five parts was developed. In accordance to the Palestinian Association of Certified Public Accountants the population of the study constituted of 156 certified public accountants located in the West Bank and Jerusalem. The sample selected using the systematic sampling method consisted of 40 CPAs, 70% responses were received. The sample included auditors distributed among different regions of the West Bank and Jerusalem.

Although IT was found to be unimportant to auditors in Palestine, the results indicated that it is more important to international auditing firms than local auditing firms. Most of the auditors in Palestine use externally developed softwares; however 84.6% of international auditing firms obtain audit packages from their holding companies. And finally, 79% of auditors in Palestine comply with ISA 401.

Abstract in Arabic

المخلص

أثر تكنولوجيا المعلومات على أساليب تدقيق النظم المحاسبية

تهدف هذه الدراسة إلى الكشف عن أثر تكنولوجيا المعلومات على مهنة تدقيق الحسابات في فلسطين.

الهدف الرئيس لهذه الدراسة هو فحص أهمية تكنولوجيا المعلومات بالنسبة لمدقي الحسابات الفلسطينيين و مقارنة هذه الأهمية بين مدقي الحسابات المحليين و مدقي الحسابات العاملين في شركات التدقيق العالمية.

لجمع المعلومات المطلوبة تم تطوير استبيان من خمسة أجزاء. حسب الجمعية الفلسطينية لمدقي الحسابات القانونيين، يوجد 156 مدقق حسابات قانوني في الضفة الغربية و القدس، تم اختيار 40 منهم بطريقة عشوائية ليشكلوا عينة الدراسة. نسبة الإجابة كانت 70%.

رغم أن نتائج الدراسة تشير إلى استخدام تكنولوجيا المعلومات ليس ذات أهمية كبيرة بالنسبة لمدقي الحسابات الفلسطينيين إلا أنه أكثر أهمية بالنسبة لمدقي الحسابات العاملين في شركات التدقيق العالمية منه بالنسبة لشركات التدقيق المحلية. كما أن النتائج تشير إلى أن أغلب مدقي الحسابات الفلسطينيين يستخدمون برامج تدقيق مصممة من قبل طرف خارج الشركة، إلا أن 84.6% من أفرع شركات التدقيق العالمية يحصلون على برامجهم من خلال الشركة نفسها. و أخيراً، 79% من مدقي الحسابات الفلسطينيين ملتزمون بالمعيار الدولي ISA401.

CHAPTER ONE

Introduction

1.1 Introduction:

In the recent decades the great development of information technology and the widespread use of computers have fundamentally influenced the accumulation and manipulation of accounting and auditing data. The significant role microcomputers play in businesses has changed the approaches auditors follow to audit their clients' financial data.

In conducting a financial audit, the auditor is encountered with complicated computerized systems; these are the accounting information systems that the clients use to process the accounting data. An Accounting Information System (AIS) is a unified structure within an entity that employs physical resources and other components to transform economic data into accounting information with the purpose of satisfying information needs of a variety of users. Such a system performs three important functions: it collects and stores data, processes collected data into information, and provides adequate controls to safeguard the organization's assets (Cerullo, 2000).

In addition to that, the auditing profession has been continuously affected by the wide technological developments that enable the auditor to perform the comprehensive auditing work using computerized systems. As a result, the use of computers to perform the auditing tasks leads the auditors to focus on certain

essential steps and leave the other auditing steps to be performed by the computerized systems. Therefore, the complexity of processing data through computerized systems influenced the nature, timing, and extent of auditing procedures. The use of IT reduced time and cost, and increased accuracy and efficiency. At the same time, IT intervention triggered several risks such as the risk that data could be accessed and modified by an unauthorized person. However, regardless of the impact information technology has on auditing, the audit objective remains the same; which is to enable the auditor to express an opinion whether the financial statements are prepared in all material respects in accordance with an identified financial reporting framework (Dassen, 1999).

As for the auditing profession in Palestine, Palestinian auditors are always exposed to accounting information systems when dealing with their clients, these accounting information systems might be simple such as BISAN and Shamel, and they might be complicated such as Oracle Financial. Palestinian auditors are supposed to obtain a basic understanding of these systems before conducting the audit. In addition, most Palestinian auditors use computerized systems to accomplish their job such as Audit Command Language, Case ware and Case view, audit system 2, and other systems. Some of these systems might perform the minor and major auditing steps, and others might perform only the simple auditing steps such as the acceptance and rejection of the client, and the design of the audit plan. In addition, such systems might be externally developed and procured, or internally developed especially when the auditor is working for an international auditing firm and this firm provides him/ her with the computerized

auditing software and other resources; however, it is so much important here to draw attention to the result of a study conducted by Dr. Nidal Sabri through which he came out with the result that most of the Palestinian certified public accountants provide more nonaudit services than audit services (Sabri,1993).

In Palestine it is not clear to what extent has information technology affected the auditors, therefore, this study aims to identify the scope of impact information technology has on the auditing profession in Palestinian.

1.2 Significance of the Study:

Articulating the relationship between IT and auditing is important; therefore, this study is considered significant for the following reasons.

1. The auditing profession is important worldwide and the same is true in Palestine. As every profession in Palestine is coping with the developmental trends, and all businesses are using computerized systems to perform the work, it is so much important to identify the scope of use of information technology in the auditing profession in Palestine.
2. By identifying the impact of information technology on auditing in Palestine, we can identify the pros and cons of this impact, and then react upon them.
3. As this study investigates several aspects of auditing job, we can highlight the weakness of the auditing profession in Palestine and put a framework to develop it.

4. This study would be of great value to both the Arab countries in general and to Palestine in particular as the literature about the auditing profession in these regions lacks related studies.

In this section it is important to draw attention to the results of one of the studies conducted by the Palestinian Central Bureau of Statistics (PCBS) that surveyed the use of the computer, the internet, and the cellular in the West Bank. According to the PCBS 26.4% of the Palestinian families have PCs, and 29.5% of this percentage obtained the PCs for education and learning purposes. As for the 78.7% that have no PCs, they thought that the reason for not obtaining PCs is its expensive price, but 42.3% claimed that none of the family members is qualified to deal with a PC (PCBS, 2004).

1.3 Objectives and Questions of the study:

This study aims to answer the following questions:

1. Is information technology important to Palestinian auditors?
2. Is information technology more important to international firms than local firms?
3. Are the audit softwares used by Palestinian auditors, both local and international, externally developed?
4. What percentage of time is saved from the overall audit engagement by using audit softwares?
5. In which phases are the auditing softwares used in Palestine most helpful?
6. To what level do Palestinian auditors comply with ISA 401?
7. What are the auditing softwares used by auditors in Palestine?

To answer these questions a questionnaire is developed, relevant data gathered and imposed to SPSS analysis using various tests.

1.4 Terms and Abbreviations:

This study consists of many terms and abbreviations related to auditing and information technology; therefore, these terms and abbreviations are defined below:

Terms:

1. **Analytical procedures:** the analysis of significant ratios and the trends including the resulting investigation of fluctuations and relationships that are inconsistent with other relevant information or which deviate from predictable amounts.
2. **Assertions:** representation by management, explicit or otherwise that are embodied in the financial statements.
3. **Audit:** a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between these assertions and established criteria and communicating the results to interested users.
4. **Audit opinion:** the report rendered by the independent external accountant at the end of an audit investigation. The four types of audit opinion are unqualified opinion, qualified opinion, adverse opinion, and disclaimer.
5. **Audit program:** sets out the nature, timing and extent of planned audit procedures required to implement the overall audit plan. The audit program serves

as a set of instructions to assistants involved in the audit as a means to control proper execution of the work

6. **Audit Risk:** the risk that an auditor may give an inappropriate opinion on financial information that is materially misstated. Audit risk has three components: inherent risk, control risk, and detection risk.

7. **Audit Trail:** Data in the form of a logical [path](#) linking a [sequence](#) of events, used to trace the transactions that have affected the contents of a record.

8. **Continuous Audit:** a systematic process of gathering electronic audit evidence to determine the efficiency and effectiveness of RTA in safeguarding assets, maintaining data integrity, and producing reliable financial information

9. **Control Risk:** the risk that a misstatement that could occur in an account balance or class of transactions and that could be material individually or when aggregated with misstatements in other balances or classes, will not be prevented or detected and corrected on a timely basis by accounting and internal control systems.

10. **Detection Risk:** the risk that an auditor's substantive procedures will not detect a misstatement that exists in an account balance or class of transactions that could be material, individually or when aggregated with misstatements in other balances or classes.

11. **E- Commerce:** E-commerce (electronic-commerce) refers to business over the Internet. The two major forms of e-commerce are Business-to-Consumer (B2C) and Business-to-Business (B2B).

12. **Electronic Data Interchange (EDI)** is the computer-to-computer exchange of structured information, by agreed message standards, from one computer application to another by electronic means and with a minimum of human intervention.
13. **Engagement Letter:** documents and confirms the auditor's acceptance of the appointment, the objective and scope of the audit, the extent of the auditor's responsibilities to the client and the form of any reports.
14. **Enterprise Resource Planning ERP:** business software for running every aspect of a company including managing orders, inventory, accounting, and logistics.
15. **Fieldwork Phase:** the phase at which the auditor carries out the test steps outlined in the audit plan.
16. **Finalization Phase:** this phase consists of compiling and documenting the information gathered during the audit. The audit package should provide an audit trail that is easily understood by third party users such as attorneys, hearings examiners and any others who may rely upon the audit in the future.
17. **Financial Reporting Phase:** this phase involves summarizing all the auditor's observations and discussing them in the observations meeting.
18. **Information Trail:** a chain of evidence that provides a record of what processing took place, who initiated, approved, or processed the transaction or record, and when the processing occurred.
19. **Inherent Risk:** the susceptibility of an account balance or class of transactions to misstatements that could be material, individually or when

aggregated with misstatements in other balances or classes, assuming that there were no related internal controls (ISA 400)

20. **Internal Auditing:** an appraisal activity established within an entity as a service to the entity. Its functions include amongst other things examining, evaluating, and monitoring the adequacy and effectiveness of the accounting and internal control system.

21. **Internal Control:** a process affected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: effectiveness and efficiency of operations, reliability of financial reporting, and compliance with applicable laws and regulations.

22. **Lead Schedule:** a listing of the detailed accounts which make up the line item total on a general ledger trail balance

23. **Materiality:** information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statements. Materiality depends on the size of the item of error judged in the particular circumstances of its omission or misstatement. Thus, materiality provides a threshold or cutoff point rather than being a primary qualitative characteristic which information must have if it is to be useful.

24. **Planning Phase:** the phase at which the auditor is supposed to determine the nature, time, and extent of the audit procedures that he/ she should follow in the audit.

25. **Real Time Accounting System:** a system that enables organizations to keep their financial reports, and all other documents updated, online, and easily accessible to both internal and external constituencies.

26. **Related Party:** parties are considered to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial and operating decisions

27. **Substantive Tests:** audit procedures testing for monetary errors and irregularities to determine whether the transaction- related audit objectives have been satisfied for each class of transaction.

28. **Test of Controls:** performed to obtain audit evidence about the effectiveness of the (1) design of the accounting and internal control systems, i.e. whether they are suitably designed to prevent or detect and correct material misstatements; and (2) operation of the internal controls throughout the period.

29. **Wrap-up Phase:** the phase at which the auditor should insure that adequate documentation exists in the audit work papers. In addition, the audit work papers should be well organized, indexed, and referenced so that a subsequent review will be clear and easy.

30. Abbreviations:

The following abbreviations are used in the study:

- AIS: Accounting Information System
- CA: Continuous Audit
- CAIS: Computerized Accounting Information System
- CPA: Certified Public Accountant

- E- Business: Electronic Business
- EDI: Electronic Data Interchange
- EDP: Electronic Data processing
- ERP: Enterprise Resource Planning
- HKJ: Hashemite Kingdom of Jordan
- IT: Information Technology
- ISA: International Standards on Auditing
- LAN: Local Area Network.
- PLC: Palestinian Legislative Council

CHAPTER TWO

Literature Review

2.1 Introduction:

The auditing profession is influenced by the wide use of computerized systems in two respects; the first respect concerns the accounting information systems that replaced the manual systems, and thus obligated the auditor to deal with complicated computerized functions instead of auditing hard copies. The second respect is that auditors no longer depend on the manual auditing approaches; instead computerized auditing softwares are widely used to complete the auditing tasks. Therefore the literature related to this study includes all the studies that tackled the two respects; the accounting information systems, and the computerized auditing tools.

Based on this fact the literature review of this study is divided into three parts; the first part, **Computerized Accounting Information Systems**, which reviews a number of important studies that searched in the computerized technologies used to accumulate, manipulate, and publish accounting information, and the advantages and disadvantages of these technologies. The second part, **The Impact of Information Technology on Auditing in General**, also reviews a number of studies that investigated the relationship between information technology and auditing, and the pros and cons of this relationship. And the final part, **Auditing in Palestine**, which reviews the general literature conducted about the auditing profession in Palestine.

2.2 Review of Literature Related to Computerized Accounting Information

Systems (CAIS):

IT applications have been an area of great interest for researchers, and as accounting has been one of the fields that benefited immensely from accounting tailored IT applications, a great number of studies investigated in the computerized accounting systems that totally replaced the manual accounting system. They researched in the impacts of these technologies and the wide changes resulted from using them. Most of these studies concluded that information technology had both negative and positive effects on accounting systems. Some of the positive effects are; the increase in speed and accuracy, decrease of cost, elimination of simple tasks, facilitating communication, and others. On the other hand, one of the serious negative effects of utilizing IT applications in accounting is increasing the possibility of accessing accounting data without authorization.

An accounting information system is a unified structure within an entity that employs physical resources and other components to transform economic data into accounting information with the purpose of satisfying the information needs. The process through which this economic data is transformed is; data collection, data maintenance, data management, data control, and information generation (Cerullo, 2000).

Most organizations engage in similar and repetitive transactions. These transactions can be grouped into five basic cycles; each cycle constitutes a subsystem in the AIS (Cerullo, 2000, Romney and Steinbart, 2002):

1. **Expenditure cycle:** consists of the activities involved in buying and paying for goods and services used by the organization.
2. **Revenue cycle:** consists of the activities involved in selling goods and services and collecting the money for sales.
3. **The human resource/ payroll cycle:** consists of the activities involved in hiring and paying employees.
4. **The financing cycle:** consists of the activities involved in obtaining the necessary funds to run the organization, repaying creditors, and distributing profits to investors.
5. **The production cycle:** consists of the activities involved in converting raw material and labor into finished goods; however, only manufacturing firms consist of this cycle.

Through the computerized accounting information systems, data can be processed by one of the following methods (Cosserat, 2000):

- a. **Batch entry/ batch processing method:** in this method, data is accumulated and then entered and processed in batches. Because of that, data entry occurs either at a convenient time, or in accordance with events; however, one of the disadvantages of this method is that the master files (ledgers) cannot be updated until the batches are accumulated. In addition, there are usually delays in correcting processing errors found in source documents or incurred in converting data into machine readable form.

- b. **On line entry/ batch processing method:** transactions here are entered directly into the computer individually as they occur; thus transaction files are accumulated as transactions are entered, and these files are subsequently processed to update the master file. A major advantage of this method is that data are exposed to validation checks by the computer program as entered, and errors are identified immediately which permits immediate correction.
- c. **Online entry/ online processing method:** this method differs from online entry/ batch processing method in two aspects; first of all, master files are updated concurrently with data entry, and a transaction log is produced that consists of a chronological record of all transactions, and each transaction is assigned a unique identifying number by the computer program. Second of all, in this method risk of errors in the master file from concurrent updates raises.

Although most organizations are continuously applying paperless systems to reduce storage costs, facilitate communication, and improve efficiency (Bedard et al. 2003), they have created significant risks related to ensuring the security and integrity of CAIS. CAIS are always exposed to sabotage and physical damage as a result of natural disasters or human actions. Also, the source of CAIS security threats might be internal as a result of employees' actions or organization process, or external such as hackers' actions or natural disasters (Abu Musa, 2003).

According to Daily et al. (2000), security measures should be a major focus point in developing an accounting information system.

According to Dassen (1999), the characteristics of effective information systems are:

1. Systems should produce information on a timely basis, in useful format and at an acceptable level of accuracy.
2. The usefulness of computer software is limited to problems and procedures that can be reduced to explicit instructions.
3. An information system processes an input uniformly throughout the system unless some aspect of the system is changed.
4. Systems should allow easy access to data for those who have legitimate purposes but deny access to those who are not authorized.

According to Pecarelli (2004), computerized applications streamline the accounting workflow processes, create efficiencies, lower costs as well as increase profitability. In addition, Charalambos and Constantinides (2003) state that the integration of applications, the production of real time information for decision making, the reduction of time incurred for accounting closure and other benefits are affecting business generations in general.

The advantages that most accountants say they have as a result of using information systems is that in the event of a disaster, they have a backup of files stored nightly off-site on tape that is impossible with paper. Moreover, they have

access from their computer (local or remote) to all files and they can share documents with clients and third parties with extreme ease (Anonymous, 2004).

After a literature review conducted by Abu Musa (2002) in an article that investigated the evaluation techniques used for CAIS, he summarized the requirements needed for implementing an effective security evaluation technique for CAIS as follows:

1. The objectives of the security evaluation should be well defined.
2. The security objects which represent the security of the system, subsystem, application, or product being evaluated should be specified.
3. The evaluators of the security system should be determined, whether internally or externally selected.
4. Security classes or categories should be specified so that the objects evaluated can be precisely classified.
5. Security criteria, measures or countermeasures should be selected to evaluate the adequacy and the effectiveness of the security system.

As computerized AISs are becoming feasible to all types and sizes of businesses, and the real time and on line data processing have made such systems easier to all users, and as computer crime has become inevitable in any organization, using sufficient security controls over CAIS has become a necessity (Berry and Otley, 1980, and Abu Musa, 2004).

In addition, the success of the CAIS depends to a large extent on the confidentiality, accuracy, integrity, and availability of the critical sensitive data processed, thus, Information technology has become one of the most critical issues in regard to these accounting systems (Abu Musa, 2002).

Given that many traditional accounting tasks can be automated, accountants add little incremental value to organizations in this regard; thus the accountant's worth is now reflected in critical thinking skills such as designing business processes, providing independent assurance, and integrating strategic knowledge (Hunton, 2002).

However, Doost (1999) has a critical point of view; often the accounting systems have reacted to the technological developments and have never taken the lead. Accountants rarely got involved in the inner technicalities or programming of computers. Even the early versions of accounting information systems text books seldom mentioned substantive related issues. Moreover, Doost believes that technological developments such as database management, expert systems, electronic spreadsheets, the internet, EDI, distributed data processing, and interconnectivity of computers have exposed accountants to new challenges.

In a study that investigated the relationship between a firm's characteristics, its internal features of the accounting software, and the general selection criteria of the accounting software (Adhikar et. al, 2004), found that firms reported preferences of software features depending on the size and the degree of internationalization. However, the relationship between firms' characteristics and general selection criteria was found to be insignificant.

Costantinides and Spathis (2003) investigated the impact of using ERP systems on the accounting process, knowing that ERP Systems lower operating costs, reduce cycle times and increase customer satisfaction. According to their study, the only changes in accounting methods and practices resulting from the use of ERP systems relate to the increased use of internal audit functions, non-financial performance indicators and profitability analyses by segment and by product.

However, according to Granlund and Malmi (2002) the ERP projects have led to relatively small changes in management accounting and control procedures. Also, most of the advanced management accounting techniques and many of the traditional ones too are operated in separate systems.

In a different point of view, Dodgson et. al (1997) expressed that most of the studies related to this topic focused on the impact of information technology on accounting only and neglected the fact that these accounting data would be reported to external parties. In a study that tackled this aspect they found out that IT use in accounting also affected the interests of external stakeholders and thus further controls are required at the societal level. A very important finding in their study is that IT use might be more effective at the less complex organizations.

As reviewed above, it is obvious that the impact of information technology on accounting is wide and that many studies raised the issue of information technology use in accounting. It is clear that the use of computer programs to fulfill accounting procedures has many advantages such as the speed of

processing the accounting information, the accuracy of completion of transactions, and reduction of costs. Moreover, accounting information systems brought into view further risks that should be taken into consideration and that need control procedures to prevent the sabotage and loss of critical accounting information.

2.3 Review of the literature related to the Impact of Information Technology on Auditing in General

The use of computers and the advances in information technology are continuously changing the techniques of accumulation, manipulation, and dissemination of accounting data. These advances have fundamentally altered the traditional methods of dealing with accounting and auditing information (Dassen, 1999). In addition, they influenced the way system users make decisions (David and Donell, 2000). Several studies investigated the issue of information technology and how these advanced developments affected auditing tools and steps. The findings of these studies included both the advantages and disadvantages of using automated systems. Moreover, such findings highlighted the importance of understanding CAISs to perform an efficient auditing job.

The great growth in information technology capabilities and the desire of businesses of all sizes to obtain a competitive advantage have led to a dramatic increase in the use of IT systems to originate, process, store, and communicate information. As a result, it is rare to find an entity whose IT use doesn't also affect its independent audit (Tucker, 2001).

Helms and Mancino (1998) explain that in the future most accounting transactions are expected to be in electronic forms. Once in electronic format accounting information will be easily stored and manipulated which would greatly change the nature of the audit. In addition, auditors performing attest functions on the transactions processed through computers should be technically competent to accomplish such tasks.

As information technology is extensively used, the auditor should have a basic knowledge of computer components and operations, computer software and its applications, and computer development and management (Dassen, 1999).

According to Guang and Yang (2004) the wide development in information technology and the extensive use of computers in businesses resulted in more IT auditing, more internal control standards and more guidelines which auditors should understand when performing their IT audits.

Stuart Manson, Sean McCartney and Michael Sherer (2001), who conducted a study on two big firms, stated that the increased use of IT is not only a competitive strategy followed by the big four firms, but also is a result of the move away from systems and transactions audit to risk-based auditing. This shifts the focus of the audit team on the client's business parts with the highest audit risk. However, they found that this increase in use of IT and the shift to automated audits improved motivation, job satisfaction, and the performance of the audit staff by eliminating tedious or unproductive audit steps. Audit automation enabled the audit staff to spend more time on analytical work rather than clerical work, which would increase the over all efficiency and quality of the audit work.

The authors also argued that IT can have an impact on organizations in two ways; first, the introduction of IT can have specific implications for the behavior and attitudes of individuals working in organizations. Second, IT can affect the structure and processes of the organization. They also conducted a study in 1997 in which they confirmed that information technology enhanced the work efficiency for its reliability and accuracy (Manson et. al, 1997).

Arens et. al (2003) assessed the risks that may result because of the extensive use of information technology. Such risks are the lack of visibility of audit trail, reduced human involvement, unauthorized accesses, loss of data, reduced segregation of duties, and the need for IT experience. The ability to make changes easily without leaving a trail needs further control requirements such as installing information trails, version tracking, and monitoring of changes for subsequent approval (Edelson et. al, 1993).

In comparison with traditional evidence gathering, which is one of the major steps in auditing, Alan Reinstein and Zabihollah Rezaee (1998) explained that automated audit requires more pronounced controls which are the procedures management puts in place to ensure activities happen the way management intends (Marks, 2004) to ensure validity, completeness, and integrity. In their comparison Reinstein and Rezaee tackled the following six areas;

First: difficulty of alteration:

Electronic evidence is easy to alter and difficult to be detected, which requires much more control procedures, on the contrary to paper evidence.

Second: Prima Facie Credibility

Paper documents have a high degree of credibility, whereas electronic documents' credibility depends on the structure of the control system.

Third: completeness of documents:

The electronic evidence may not include all essential terms of transactions.

Forth: evidence of approvals:

Electronic approvals may not be viable and can be done by pressing one key on the key board.

Fifth: ease of use:

Knowledge of data extraction techniques is required when gathering electronic evidence.

Sixth: Clarity:

Electronic evidence is not that clear and may lead to different conclusions based on both the procedures and controls used.

According to Irving (2001), audit automation offered more advantages than disadvantages. Auditors can use the computerized tools to replace repetitive tasks which would increase speed, outputs, consistency, and efficiency.

Huberty (2000), who studied Cargill Inc. as a case, found that a major reason for automating the audit in Cargill Inc. was providing staff auditors and audit management alike with on demand access to information.

James Beirstaker et. al (2004), stated in their study that the use of computerized systems is growing at a rate of 53% per year. This increasing rate necessitates auditors to deeply understand such systems to be able to audit through

them. In addition, they confirm that if traditional audit methods are still used when auditing electronic transactions and trails, significant risks may go unnoticed.

According to Marks (2004), an information technology auditor (IT auditor) specializes in the work performed by automated procedures, and nowadays systems include so many automated procedures which need to be audited, the auditor should identify and understand the controls on the overall process and then select the critical automated procedures to be tested. Marks also states that the audit work should be integrated and this would happen when the audit team works 100% together to understand the client's risks over which the controls are to be tested, identifying the key controls, document, assess, and test them.

As accounting systems are based on Electronic Data Interchange (EDI), and so do auditing procedures, auditors are presented with several audit and control implications; however, EDI involves some risks as follows (Reinstein and Rezaee, 1998):

- 1) As information is communicated over public networks, unauthorized persons can intercept and change information.
- 2) Using EDI, information obligations require partners to depend more and more on each other.
- 3) Transactions are exposed of being lost, and finding them becomes more difficult.
- 4) As the reliance on computer controls increases, the effectiveness of internal control systems is impeded.

- 5) As speed of transactions increases, correcting errors in a timely manner becomes more difficult.
- 6) The failure of one software component would affect the entire entity significantly and adversely.

Jui-Chi Chen et. al (1997) also conducted a study to understand the impact of EDI on accounting systems and auditing. One of their findings is that EDI users were concerned with control issues at the technical level and the organizational level as they feared the EDI to provide unwanted accesses for hackers.

Cerullo (1985) states that general controls relate to EDP activities, if such controls were not there, or if they are poor, the auditor must do further auditing tests.

Elam et. al (2001: p 151), who elaborated in their study on continuous auditing, explained that under Real Time Auditing (RTA) systems, much of the financial information and audit evidence are available only on electronic form which requires the creation of new audit procedures, and this requires the independent auditor to employ continuous audit (CA). They typically defined CA as “a systematic process of gathering electronic audit evidence to determine the efficiency and effectiveness of RTA in safeguarding assets, maintaining data integrity, and producing reliable financial information”.ⁱ. CA can reduce the amount of time and costs auditors usually require when auditing manually, and at the same time, it increases the quality of financial audits by allowing auditors to focus more on understanding a client’s business and industry, and its internal control structure.

In comparison between traditional audit and CA, Elam et. al (2001) explain that traditional auditors perform test of controls to assess the effectiveness of such controls and thus determine the different aspects of substantive tests. The more effective the control structure is the less substantive tests are required. However, under the RTA both the tests of controls and the substantive tests are performed simultaneously to gather evidence on the reliability of the system to produce reliable and credible financial information.

Chen (2004) explains that using the CA approach allows the auditor to continuously monitor and analyze the transactions processed in a real time accounting system to ensure the reliability and relevance of the financial information provided. He also adds that such approach enhances the effectiveness of the audit as it provides a greater ability to detect material misstatements.

Rapid advancements in technology have now made CA more feasible as it enables auditors to monitor a company's system over the internet (Searcy and Woodroof, 2003). However, the one time data entry makes it difficult to detect errors and inconsistencies. Audit trails mitigate this concern; still, they are vague (Chaouch et al., 2005).

However, according to Doost (1999), auditors often considered the computers as black boxes and were afraid of dealing with substantive computer issue until the mid of 1970s when several accounting scandals were revealed and it was ensured that these scandals were not caught because of lack of engagement between auditors and computers. On the other hand, Gerard and Dunn (2001),

state that auditors are continuously expected to share in the design of information systems as part of the auditing work.

The Sarbanes- Oxley Act , which was established on 2002 to protect investors, requires according to section 404 each annual report of an issuer to contain an “internal control report” which should state the following (AICPA, 2002):

1. Management responsibility in establishing a sufficient internal control structure for the financial reporting.
2. Assessment of the effectiveness of the internal control structure for the financial reporting.

Alles, Kogan, and Vasarhelyi (2004) state that the Sarbanes- Oxley Act of 2002 stresses the need for more reporting and continuous assurance to gain public’s faith in the financial statements issued. It requires an annual evaluation of internal controls and procedures for financial reporting (Ramos, 2004, Damianides, 2005, and Hemani (2005). However, McCuaig (2005) explains that although this emphasis provides some clarification about deficiencies, this act didn’t provide any formal guidance for detecting deficiencies before they become reportable.

In addition, since the establishment of this act, Information Systems specialists are facing further challenges to meet the expectations of providing accurate, visible, and timely information (Damianides, 2005).

Internal auditors are extensively exposed to advanced technologies such as EDI, ERP, LAN, and e- commerce (Smith and Smith, 2003). Many studies tackled the exposure of internal auditors to such technologies; for example,

research has pointed out some important responsibilities for internal auditors in the IT implementation process. The three areas of potential oversight are: 1. validation and testing, 2. documentation, and 3. training (Ivancevich and Tracy, 2003).

As a result of the increasing connectivity in the workplace, the internal auditor is more exposed to IT systems than before, thus, several risks stemming from IT intersect must be investigated by auditors such as access control, data integrity, asset management, and software acquisition and development (Hadden et. al, 2001, Frank and Lowe, 2003, and Silltow, 2003).

Both internal and external auditors can use one of the following approaches when auditing computerized based accounting systems (Cerullo, 2000):

1. **Auditing around the computer:** this approach focuses on inputs and outputs of the systems, i.e. if the auditor can show that the actual outputs are the correct results to be expected from a set of inputs to the system, then the computer processing must be functioning in a reliable manner. However, as using this approach does not involve understanding the computer processing concepts, it can be easily and economically applied. This approach can be suitable only when the following three conditions are fulfilled:
 - a. The audit trail is complete and visible
 - b. The processing operations are straightforward and uncomplicated.

- c. Complete documentation is available to the auditor.

Nevertheless, even when these three conditions are fulfilled, this approach is not considered sufficient as it does not allow the auditor to exactly know how the computer processing program would handle all types of transactions.

2. **Auditing through the computer:** this approach focuses on the computer processing steps. It assumes that if these programs are properly developed and designed then errors and irregularities are most likely to be detected, thus, outputs can reasonably and reliably accepted.
3. **Auditing with the computer:** this approach involves many mainframes or microcomputers to aid in performing steps in detailed audit programs.

With regards to E-business, Abu Musa (2004), states that the increase of competition and thus the decreasing prices encouraged many companies to automate their AISs and to adopt E-business, which brought a new challenge to external auditors to understand how advanced technologies affect their audit staff process. Therefore, external auditors should be able to evaluate the adequacy and accuracy of the electronic audit evidence, and they need to judge the validity, completeness, and integrity of accounting records. In addition, Jaqdish Pathak (2003) explains that E-commerce requires auditors to identify risks and show their impact on the information systems.

Another area faced by auditors as a result of the extensive use of sophisticated technology is that experts are required to teach, and students are required to learn. Auditors are supposed to choose among the wide range of technological options

and choose the best suitable softwares and computer applications and teach them to juniors (Jackson, 2004).

With regard to the international standards on auditing, the IASC issued ISA 401 as guidance for auditing in a Computer Information System environment (CIS). According to this standard a CIS environment exists when “a computer of any type or size is involved in the processing by the entity of financial information of significance to the audit, whether that computer is operated by the entity or by a third part”² (IFAC, 2004: p 375).

ISA 401 States that a CIS environment can affect (IFAC, 2004: p 375):

- The procedures followed by the auditor in obtaining a sufficient understanding of the accounting and internal control systems.
- The consideration of inherent risk and control risk through which the auditor arrives at the risk assessment.
- The auditor’s design and performance of tests of control and substantive procedures appropriate to meet the audit objective.

According to SAS 94: **The Effect of Information Technology on the Auditor's Consideration of Internal Control in a Financial Statement Audit**, which is an amendment to SAS 80; whenever there is one or more financial statement assertions that are electronically initiated, recorded, processed, and reported, the auditor may determine that it is not practical or possible to limit detection risk to an acceptable level by performing only substantive tests for one or more financial statement assertions. In such situation, the auditor should gather

sufficient evidence about the effectiveness of both the design and operation of controls to reduce the assessed level of control risk. (AICPA, 2001).

To summarize the results of the above studies one can say that audit automation increases the accuracy of auditing procedures, adds value to the auditing firm, and improves managerial surveillance and control. However, using audit programs and dealing with complicated systems entails the auditor to gather evidence electronically and investigate more carefully the processing of data to ensure that none of the risks goes unnoticed.

2.4 Review of Literature Related to Auditing in Palestine

There are limited studies conducted on the auditing profession in Palestine. However, the status of the auditing profession is not bad as several conferences, workshops, discussions, courses, were conducted to improve the level of this profession. The law that organizes the auditing profession currently is the HKJ law of 1961. Moreover, the Palestinian association and the PLC have been working on a new auditing profession law that has been approved but still needs some procedures to become applicable.

The **Palestinian Association of Certified Public Accountants** has been working on the adoption of the international standards on auditing (IASs) in order to cope with the development and enhance the level of the auditing profession in Palestine. The adoption of these standards is faced with the following obstacles (Abu Hakmeh, 2002):

1. The situation and the level of the auditing profession in Palestine is not that well built; thus, auditors need to progress in different aspects.
2. The globalization that obligates the auditors to obtain sufficient knowledge about the international working companies and the related laws and policies.

According to Allawneh (1999), who assesses the compliance of Palestinian auditors with the international auditing standards (IASs), auditors in Palestine lack the objectivity and the independence in their audits. In addition, Palestinian auditors do not perform adequate evaluation and testing of internal control systems. In general, the degree of compliance with the ISAs is low.

The law of the auditing profession that is applicable currently in the West Bank is the HKJ 1961, which states the conditions the auditor must fulfill to become a licensed auditor. It also specifies the duties of auditors and the punishments for working against regulations (HKJ, 1961). However, the Palestinian Legislative Council and the Palestinian Association of Certified Public Accountants have been working on a new law for the auditing profession, and this law has been approved by the PLC but it still needs some procedures to become applicable. The most important part of this new law is that an authoritative body will be formulated that will be responsible for the following (PACPA, 2001):

1. To issue licenses for auditors
2. To determine the auditing exams' fees.
3. To establish the policies that must be followed in order to apply this law.
4. To approve punishments against violations committed by auditors

5. To provide and supervise auditing exams.
6. Other responsibilities and authorities in accordance with the law.

With regards to the difficulties facing the auditing profession in Palestine, Neiroukh (2000) states that there is no authoritative or professional body to legislate the use of certain accounting standards, and that the public accounting profession is not organized by any authoritative body.

As the auditing profession is very important and has a great effect on the economic factors, auditors must have several qualifications and characteristics, such as the integrity, independence, punctuality, social and public relationships, good reputation, and general knowledge in different fields related to auditing (PACPA, 1997).

According to Mouhamad Al- Skeikh (2000), auditors in the West Bank have sufficient understanding of “quality control on Auditing” concept and appreciate its importance. Most of them apply this quality control in their offices and during their work. However, some obstacles exist in applying quality control procedures such as the slow progress of auditing profession in Palestine, and the lack of a legal control over auditing firms.

To conclude, it’s obvious that the auditing profession in Palestine is still in the early stages. In addition, it is quiet apparent that there is a good awareness of its weakness which triggers the related bodies to work more on developing and strengthening the status of this profession in Palestine.

2.5 Conclusion

A great number of studies tackled the subject of IT and auditing, or IT and accounting. Most of such studies investigated the advantages and disadvantages of the wide IT intervention. Many studies also searched in the relationship between the auditing, or accounting professions and different technologies such as EDP, EDI, LAN, and other technologies.

From the above literature review, one can deduce that IT has dramatic impacts on both accounting and auditing. These impacts are either positive or negative. Examples of the positive impacts are: the increase in speed, accuracy of transactions, more managerial surveillance, and others. Examples of the negative impacts are: the possibility of unauthorized access, fear of losing data, and other risks. This extensive use of information technology exposed accountants and auditors to a great challenge of using advanced approaches in handling accounting and auditing information.

Moreover, few papers were found that addressed information technology and auditing in Palestine. Most of the related studies tackled auditing profession in Palestine in general and discussed its conditions and the level of developments this profession is incurring.

CHAPTER THREE

Methodology

To answer the questions of this study, and to meet the objectives for which this study was conducted, it was found out that developing a questionnaire would be the best data gathering tool to be used. However, within the process of distributing the questionnaire several phone interviews were conducted at which wealthy information was gathered.

3.1 Population and Sample of the Study:

According to the Palestinian Association of Certified Public Accountants, there are 156 CPAs in the West Bank and Jerusalem, and they represent the population of the study. The population was clustered geographically into seven clusters; Rammallah, Jerusalem, Nablus, Hebron, Bethlehem, Tolkarem, and Jenine and Qalqelia. Then a sample of 40 CPAs was chosen using the systematic sampling method. The questionnaire was sent via fax and email to the 40 sample members. 70% responses were received. Most of the responses were received from the auditors in Rammallah and Jerusalem; these percentages are shown in the table below:

Table (3-1): Response Percentage

Area	Rammallah	Jerusalem	South of the West Bank	North of the West Bank
Percentage of response of the 70%	68%	21%	4%	7%

3.2 Development of the Questionnaire:

The questionnaire was redesigned three times to assure that a reliable, consistent, and valuable one is developed. The supervisor, Prof. Nidal Sabri, asked to add more parts about the auditing softwares used in Palestine and the degree of compliance with ISA 401 in Palestine. After that it was sent to two referee auditors and they are Mr. Musa Abu Daieh and Mr. Hanna Qufa. Mr. Musa Abu Daieh recommended further amendments before the final draft was ready. As for Mr. Hanna Qufa, he didn't have comments on the questionnaire. The questionnaire developed consisted of five parts divided as follows:

1. General information
2. The use of computerized auditing programs
3. The level of involvement of computerized programs in auditing tasks
4. Level of compliance with ISA 401
5. Auditing softwares used in Palestine

Each part of the questionnaire is explained below

Part one: General Information

This part aimed to gather general related information about the auditor such as the title, the type of the auditing firm for which he/ she works.

Part Two: The Use of Computerized Auditing Programs:

This aimed to gather some relevant information about the auditing software the auditor uses, such as the percentage of time saved by using the software, the phases at which the auditing software is most helpful, and others.

Part Three: The Level of Involvement of Computerized Programs in Auditing Tasks:

This part aimed to find the level of involvement of the auditing software in the whole audit engagement; i.e. how complicated is the auditing software and to what extent does the auditing software perform the auditing tasks.

The measuring scale used in this part is the dichotomous scale; i.e. **Yes/ No**, (Sekaran, 2000).

In this part, the use of Information Technology is considered important if the answer to the following phrases is **YES**:

1. You can calculate the inherent risk using the analytical procedures provided in your auditing software
2. Your auditing software provides audit working papers automatically such as lead schedules and working trial balances
3. Your auditing software helps you in the selection of the sample of the client's data
4. When testing your client's control structure you reprocess the accounting data using your own auditing software.
5. Your auditing software can prepare adjusted balances.

6. Your auditing software can do the posting to lead schedules and other working papers.
7. Your auditing software can help you identify the fraudulent related party transactions
8. Do you have a specific audit software function that can evaluate the complexity of the client's accounting information system?

Part Four: Level of Compliance with ISA 401:

ISA 401 is the international standard on auditing that provides the guidance for auditing in a computer information system environment (Carmichael and Guy, 1999). As the Palestinian Association for Certified Public Accountants has been trying to apply the International Standards on Auditing (ISAs) in the West Bank and Gaza, it is important to find out to what level Palestinian auditors comply with this standard.

The measuring scale for this part is the dichotomous scale as well. The auditor is considered compliant with ISA 401 if his/her answers to the following questions are **YES**:

1. Before starting the audit process, do you obtain a sufficient knowledge of the client's accounting information system?
1. Does your audit plan depend on the client's internal control structure?
2. Does your audit plan depend on the complexity of the client's accounting information system?
3. Does your assessment of the inherent and control risks depend on the complexity of the client's accounting information system's functions?

Part Five: Auditing Softwares:

This part aims to pinpoint the auditing softwares used by the Palestinian auditors. In this part several auditing softwares are listed, and the auditor is asked to choose the one he/ she uses. If the auditing software that the auditor uses is not listed in the list, the auditor is asked to write the name of his/ her auditing software.

3.3 Procedure:

To conduct this study, the questionnaire was sent to the selected sample by email and fax. After calling each sample member several times, 70% responses were received. The duration for conducting the study was one month; the first week was spent on calling all the sample members by phone to explain the purpose of the study and get their approvals to send a copy of the questionnaire. It took almost a month to get their replies

3.4 Data Analysis:

SPSS was used to analyze data gathered. The following functions were used to answer the questions of the study:

1. Frequency Test

This test was used to find out the following:

- The percentage of externally developed and internally developed audit softwares used by auditors in Palestine.
- Percentage of international auditing firms that obtain audit packages from the international holding company

- Percentage of time saved from the audit engagement by using audit softwares
- Phases at which the audit softwares used by auditors in Palestine are most helpful, more helpful, helpful, less helpful, and least helpful.

2. Selection of cases

This function was used to find out the following:

- Importance of IT to auditors in Palestine
- The level to which auditors in Palestine comply with ISA 401.

3. Reliability test

This function was used to:

- Rank the phases at which the audit softwares used in Palestine are most helpful, more helpful, helpful, less helpful, and least helpful.

3.5 Limitations of the Study:

While doing the study, the following limitations were faced:

1. Lack of linguistic capacities: many of the auditors in Palestine do not understand the English language well. It was hard to translate the questionnaire into Arabic because the expressions used in the questionnaire do not have proper translations in Arabic, moreover, the offices that translate from one language to another usually translate literally; therefore, there is a probability that some of sample members could not understand some of the questions of the questionnaire.

2. Israeli barriers: the sample of the questionnaire is distributed among all the West Bank regions, such as Qalqelia, Nablus, and Hebron. As there are many Israeli barriers every where in the West Bank, that prohibits the entrance to these cities easily, it was hard to get there and meet the sample members face to face which would increase the accuracy and reliability of data gathered
3. Lack of literature review in the Arab countries: when doing the literature review about auditing in Palestine, related studies were hardly found. They are rare in the Arab countries in general and in Palestine in particular.
4. The limited size of the sample: the size of the sample of the study is relatively small for the following reasons:
 - The exclusion of Gaza: according to the Palestinian Association of Certified Public Accountants, Gaza was excluded of the population because of the rigid restrictions put on Gaza by the Israeli Government.
 - Although the number of auditors registered by the Palestinian Association of Certified Public Accountants is 156, a great number of these auditors do not work as auditors any more, and some of them are out of the country.
 - Low contribution done by the auditors: the size of the sample is not as large as aimed because of another important factor that is the law contribution done by auditors selected in the sample. Although almost each member of the sample was contacted by phone twice or

more, they were so slow in responding and a great number of them did not respond at all.

3.6 Conclusion

To gather the relevant data for the study a questionnaire was developed including five parts; general information, the use of computerized auditing programs, the level of involvement of computerized programs in auditing tasks, the level of compliance with ISA 401, and the auditing softwares used in Palestine. The population of the study constituted of 156 CPAs located in Rammallah, Jerusalem, Nablus, Hebron, Beit Lahem, Tolkarem, and Jenine and Qalqelia. The sample of the study consisted of 40 CPAs, 70% of the cases were received.

CHAPTER FOUR

Findings of the Study

This chapter is divided into two sections; the first section, **Results**, displays all the results obtained after analyzing data gathered, this part answers the questions of the study. The second part is the **Discussion**, in which the most important observations and the critical issues are imposed to further discussions and manipulations.

4.1 Results:

This section is organized in the following sections:

1. The first section elaborates on the importance of IT to auditors in Palestine.
2. The second section compares the importance of IT between local auditing firms and international auditing firms.
3. The third section discusses the development of the auditing softwares used by auditors in Palestine.
4. The fourth section displays the percentage of time saved from the whole audit engagement by using auditing softwares.
5. The fifth section displays the audit phases at which auditing softwares used in Palestine are most helpful, more helpful, helpful, less helpful, and least helpful.
6. Part six tests the degree of compliance with ISA 401.
7. Part seven displays some of the auditing softwares used in

Palestine.

In this section the questions of the study are answered. In addition, in each part included in this section there is a comparison between local auditing firms and international auditing firms.

4.1.1 Importance of Information Technology to Auditors in Palestine

In the methodology chapter, the criteria for considering IT important to the auditor were defined. By selecting the cases that fulfill these criteria, the results were as follows:

Table (4-1): Importance of IT to Auditors in Palestine

	<i>Number of Cases</i>	<i>Percentage</i>
Important	5	18%
Not Important	23	82%

Which means that IT plays an important role in auditing only for 18% of auditors in Palestine; therefore the answer to the first question of the study; “**is IT important to auditors in Palestine?**” , is no, IT is not importantly used by auditors in Palestine.

Comparison between Local Auditing Firms and International Auditing Firms:

To compare between local auditing firms and international auditing firms, data was split into two groups; *local auditing firms*, and *international auditing firms*. Then for each group, cases that fulfill the importance of IT criteria were selected and the results were as follows;

Table (4-2): Importance of IT: Comparison between Local Auditing Firms and International Auditing Firms

	Important	Not Important
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Local Auditing Firms	6%	94%
International Auditing Firms	31%	69%

According to the table above, IT is considered important to 6% only of local auditing firms and to 31% of international auditing firms. This means that the computerized systems used by international auditing firms can perform more critical and complex functions than those used by local auditing firms.

4.1.2 Development of the Auditing Software:

To answer the second question of the study; “**Are the audit softwares used by Palestinian auditors externally developed?**”, a test of frequencies was conducted to find out the percentage of externally developed and internally developed auditing softwares. The results were as follows:

Table (4-3): Whether the Audit Software is Externally Developed or Internally Developed

	Percent
externally developed	57.1
internally developed	42.9

According to the results in the table above, 57.1%, the greatest percentage, of auditors in Palestine use externally developed softwares.

The same frequency test was also conducted to the two separate groups; local auditing firms and international auditing firms, and the results were as follows:

Table (4-4): Development of the Auditing Software: Comparison between Local Auditing Firms and International Auditing Firms

	Local Auditing Firms	International Auditing Firms
Externally Developed Softwares	53.3	61.5
Internally Developed Softwares	46.7	38.5

According to the results above, only 38.5% of softwares used by international auditing firms are internally developed, while the percentage is 46.7% for local auditing firms. This result is vague because the opposite is expected; therefore, it is discussed in the discussion section.

With relation to the results above, a frequency test was conducted for international auditing firms group, to find out the percentage of audit packages obtained from the holding company. The results were as follows:

Table (4-5): Obtaining Auditing Packages from International Firms

	Percent
Yes	84.6
No	15.4

The greatest percentage of international auditing firms, 84.6%, obtain audit packages from their holding companies, this result is also discussed in the discussion section.

4.1.3 Percentage of Time Saved from the Audit Engagement by Using Auditing Softwares:

The audit engagement starts from the point the client is accepted till the issuance of the auditor report. To find out the percentage of time saved by using computerized systems a test of frequencies was conducted and the results were as follows:

Table (4-6): the Percentage of Time Saved by Using the Audit Software

Percentage of Time Saved	Valid Percent
0%	4.0
1-15%	4.0
16-30%	44.0
more than 30%	48.0

These results answer the fourth question of the study; “**what percentage of time is saved from the overall audit engagement by using auditing softwares?**”.

It is really promising that 44% of auditors in Palestine believe that using IT saves 16-30% of the audit engagement time, and 48% believe more than 30% is saved.

Comparison between Local Firms and International Firms:

The same test was conducted for the two separate groups, and the results were as follows:

Table (4-7): Time Saved from the Audit Engagement: Comparison between Local Auditing Firms and International Auditing Firms

Percentage of Time Saved	Local Auditing Firms	International Auditing Firms
0%	7.7	0%
1-15%	7.7	0%
16-30%	46.2	41.7
more than 30%	38.5	58.3

7.7% of local auditors think that time saved from the audit engagement is zero, 7.7% of them think that 1-15% time is saved, 46.2% believe that time saved is 16-30%, and 38.5% believe the percentage saved is more than 30%. However, 100% of international auditing firms believe that time saved is more than 16%

4.1.4 Phases at which the Audit Softwares are Helpful:

Planning Phase:

Table (4-8): the Extent to which the Audit Software is Helpful in the Planning Phase

	Valid Percent
most helpful	58.3
more helpful	20.8
helpful	4.2
less helpful	12.5
least helpful	4.2

The planning phase is the phase at which the auditor is supposed to determine the nature, time, and extent of the audit procedures that he/ she should follow in the audit. At this stage the auditor should calculate the audit risk based on the inherent risk and the control risk.

58.3% of auditors in Palestine believe that their audit softwares are most helpful in this phase, and 20.8% believe that they are more helpful in this phase.

Fieldwork Phase

Table (4-9): the Extent to which the Audit Software is Helpful in the Fieldwork Phase

	Valid Percent
most helpful	41.7
more helpful	41.7
helpful	4.2
less helpful	12.5
least helpful	0%

During the fieldwork phase the auditor carries out the test steps outlined in the audit plan. The auditor is supposed to select and examine samples of transactions, observe processes, and conduct additional interviews as needed.

41.7% of auditors in Palestine believe that their audit softwares are most helpful in this phase, and 41.7% of them believe they are more helpful in this phase.

Finalization Phase:

Table (4-10): the Extent to Which the Audit Software is Helpful in the Finalization phase

	Valid Percent
most helpful	25.0
more helpful	8.3
helpful	41.7
less helpful	16.7
least helpful	8.3

Audit finalization consists of compiling and documenting the information gathered during the audit. The audit package should provide an audit trail that is

easily understood by third party users such as attorneys, hearings examiners and any others who may rely upon the audit in the future.

41.7% of auditors believe that their audit softwares are helpful in this phase, while 8.3% believe they are more helpful, and 25% believe they are most helpful in this phase.

Wrap-up Phase:

Table (4-11): the Extent to which the Audit Software is Helpful in the Wrap-up phase

	Valid Percent
most helpful	12.5
more helpful	12.5
helpful	05
less helpful	37.5
least helpful	37.5%

In the wrap up phase, the auditor should insure that adequate documentation exists in the audit work papers. In addition, the audit work papers should be well organized, indexed, and referenced so that a subsequent review will be clear and easy.

In this phase 37.5% of auditors believe their softwares are less helpful, and 37.5 % also believe they are least helpful.

Financial Reporting Phase:

Table (4-12): the Extent to which the Audit Software is Helpful in the Financial Reporting Phase

	Valid Percent
most helpful	20.8
more helpful	20.8
helpful	33.3
least helpful	25%

The reporting phase involves summarizing all the auditor's observations and discussing them in the observations meeting. Then the auditor will write a draft of the audit report, concisely describing the condition and the tentative plan of action for rectifying the condition. After discussing it with the client, the auditor issues his final audit report. In this phase 20.8% of auditors think their audit softwares are more helpful, 20.8% believe they are most helpful, and 33.3% believe they are helpful.

To be able to rank the phases, a reliability analysis was done and the phases are ranked based on the mean. The results are shown in the table below:

Table (4-13): Ranking Phases

<u>Phase</u>	<u>MEAN</u>	<u>Ranking</u>
Planning Phase	1.8333	Most Helpful
Fieldwork Phase	1.8750	More Helpful
Finalization Phase	2.7500	Helpful
Wrap- Up Phase	3.7500	Least helpful
Financial Reporting Phase	2.8750	Less Helpful

Comparison between Local Firms and International Firms:

The same reliability analysis was also conducted for the two separate groups and the results were as follows:

Local Auditing Firms

According to the means, the ranking of the phases for the local auditing firms is as follow:

Table (4-14): Ranking phases- Local firms

Phase	Mean	Ranking
Planning Phase	2.6364	More helpful
Fieldwork Phase	1.9091	Most Helpful
Finalization Phase	2.7273	Helpful
Wrap- Up Phase	4.0000	Least helpful
Financial Reporting Phase	2.8182	Less helpful

Therefore, the auditing softwares used by local auditing firms are most helpful in the fieldwork phase, and least helpful in the wrap- up phase.

International Auditing Firms

The ranking of phases for international auditing firms is as follows:

Table (4-15): Ranking Phases- International Firms

Phase	Mean	Ranking
Planning Phase	1.1538	Most helpful
Fieldwork Phase	1.8462	More helpful
Finalization Phase	2.7692	helpful
Wrap- Up Phase	3.5385	Least helpful
Financial Reporting Phase	2.9231	Less helpful

According to the ranking in the table above, the auditing softwares used by international auditing firms are most helpful in the planning phase and least helpful in the wrap- up phase. This difference between local auditing firms and international auditing firms is further discussed in the discussion section.

4.1.5: Compliance with ISA 401:

ISA 401 provides guidance on the procedures that should be followed when the auditor is auditing in a Computerized Information Systems Environment (Carmichael and Guy, 1999).

The cases that fulfill compliance criteria (mentioned in chapter three) were selected and the results were as follows:

Table (4-16): Compliance with ISA 401

	Number of cases	Percentage
Compliant	22	79%
Not compliant	6	21%

Therefore, the answer to the final question of the study; *to what level do Palestinian auditors comply with ISA 401?* Is that 79% of auditors in Palestine comply with ISA401 and 22% don't.

Comparison between Local Firms and International Firms

The same test was applied to the two separate groups, and the results were as follows:

Table (4-17): Compliance with ISA 401: Comparison between Local Auditing Firms and International Auditing Firms

	Local Auditing Firms	International Auditing Firms
Compliant	60%	100%
Noncompliant	40%	0%

While 60% of local auditing firms comply with ISA 401, 100% of international firms comply with it.

4.1.6 Auditing Softwares used in Palestine:

The results of the final section of the questionnaire were as follows:

Table (4-18): Auditing Softwares Used in Palestine

<u>Auditing Software</u>	<u>Percentage of auditors using it</u>
My Client	28.6%
Audit Systems 2	21.4%
Auditor Workstations	3.6%
Case ware and Case View	14.3%
Audit Command Language (ACL)	3.6%
EY Random	3.6%
EY Micro start	3.6%
EY Predictor	0%
Other Softwares	50%

Such examples on other softwares used by Auditors in Palestine are; Audit Procedures Software, Audit Works, and ATB.

4.3 Discussion:

In this section, the critical observations are taken from the results section and discussed. This section discusses the importance of IT to auditors in Palestine, and the comparison between local firms and international firms. It also discusses the issue of internally developed and externally developed auditing softwares used by auditors in Palestine.

4.2.1 Importance of Information technology to Auditors in Palestine:

According to the results above, IT is considered significant only to 18% of auditors in Palestine. This result is quite frustrating because it means that auditors in Palestine do not depend on advanced or complex systems which include functions that replace many of the auditing steps, which would reduce time and increase accuracy, and thus increase the efficiency of the auditing work. To elaborate more about this issue, it is important to explain each function taken into consideration in the criteria of IT importance;

1. *You can calculate the inherent risk using the analytical procedures provided in your auditing software.*

As defined in the section of terms and abbreviations, the inherent risk is the susceptibility of an account balance or class of transactions to misstatements that could be material, individually or when aggregated with misstatements in other balances or classes, assuming that there were no related internal controls (ISA 400). The auditor is supposed to assess this risk as part of the audit risk to determine the nature, timing, and amount of audit procedures necessary to arrive to an acceptable level of reliability in the audit (Dassen et al., 1999). This assessment is done in the planning phase, and affects the field work phase. If the auditing software used by the auditor can do this function, it would reduce time and increase efficiency, which would be more promising especially in the field work phase. The number of cases that their answers to this sentence were yes is 16 i.e. 57%.

2. Your auditing software provides audit working papers automatically such as lead schedules and working trial balances

A working paper is a record of the auditor planning; nature, timing, and extent of the auditing procedures performed, results of such procedures, and the conclusions drawn from the evidence obtained. Working Papers maybe in the form of data stored on paper, film, electronic media, or other media.

The number of cases that their answers to this sentence were yes is 25 i.e. 90%, which is so promising.

3. Your auditing software helps you in the selection of the sample of the client's data

To perform the audit plan, the auditor must first select a certain sample of data to be tested. This question aimed to find out how many auditors rely on the computerized system to perform this function. Results were: 22 cases i.e. 79%.

4. When testing your client's control structure you reprocess the accounting data using your own auditing software.

Reprocessing accounting data using the auditing software is one of the approaches used to auditing CAIS (Auditing With The computer). If the auditing software can do this, it indicates to complexity and wide intervention of IT.

The number of cases that answered yes to this question were 20 i.e. 71%. However, this result is confusing as it reflects a wide use of IT, while the overall results indicate to the opposite.

5. *Your auditing software can prepare adjusted balances*

The number of cases that answered yes to this question is 25 i.e. 90%

6. *Your auditing software can do the posting to lead schedules and other working papers*

A lead schedule is a listing of the detailed accounts which make up the line item total on a general ledger trail balance. To do the posting to such schedules is to send related items automatically. Number of cases selected here is 25, 90%.

7. *Your auditing software can help you to identify the fraudulent related party transactions*

Parties are considered to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial and operating decisions. Such capability may result in fraudulent activities. If the computerized auditing system can detect such transactions it would be considered very advanced. The number of cases that answered yes to this question is 14, 59%. This result is not consistent with general results as well. As said before, if the computerized system can do this function it would be very advanced, however; the overall results are not consistent with this result.

9. *Do you have a specific audit software function that can evaluate the complexity of the client's accounting information system?*

To calculate the complexity of the client's AIS, the audit software should have a special function to do so. And this function would be quite complex. Results were 9 i.e. 32%. This result is acceptable and expected.

During the phase of distributing the questionnaire many of the auditors conveyed the message that the questions of the questionnaire are not even applicable. A great number of them explained that what they do is checking vouchers, compare numbers with the journals and then preparing the financial statements for the client. this work is far from what audit is, which is a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between these assertions and established criteria, and communicating the results to interested users. This information is consistent with the results of Sabri's study that most of the work the auditor in Palestine usually does is bookkeeping, taxation and other accounting tasks, rather than auditing (Sabri, 1993).

4.2.2 Importance of IT; Comparison between local auditing firms and international auditing firms:

As results indicate, IT is more important to international auditing firms than local auditing firms, and the difference between the two groups is 25% (31%- 6%) which is material. this difference can be justified by the fact that international auditing firms in Palestine are obliged to use auditing packages imposed by the holding company; this is obvious from the results of the following question;

Do you get auditing packages from your international firm?

A. Yes

B. No

84.6 % of auditors answered by *Yes*. Obviously, as auditing packages are imposed by an international auditing firm, these packages would be much more advanced

and depends a lot on IT intervention; therefore, this difference of the importance of IT between local firms and international firms is justifiable.

4.2.3 Internally developed and externally developed auditing softwares; Comparison between Local auditing firms and International auditing firms

Another critical and vague issue is that local auditing firms use more internally developed softwares than international auditing firms do. According to the third part in the results section 47.1% of auditing softwares used by local firms are internally developed, while the result is 38.5% for international auditing firms. This result is critical especially that 84.6% of international auditing firms obtain audit packages from their holding companies and most of these packages are developed by the auditing companies themselves. Several justifications for this result are:

1. The question; **the auditing software that you use is: (a). externally developed (b) internally developed**, was not as clear as aimed. The question should have differentiated between the two expressions.
2. International firms might have considered the audit packages obtained from the holding company external.
3. International firms didn't know whether the audit packages obtained from their holding companies are externally developed or internally developed.
4. Auditors couldn't understand the question because they lack the linguistic capacities.

4.2.4 Phases at which the Auditing Softwares Used in Palestine are Helpful: Comparison between Local Auditing Firms and International Auditing Firms

According to the results, auditing softwares used by local firms are most helpful in the fieldwork phase, while those used by international firms are most helpful in the planning phase. As mentioned above, a great number of auditors especially the local ones consider the audit as comparing numbers and then preparing the financial statements for the client, therefore the computerized systems they use would be doing these functions which are considered the field work for such an auditor. In addition, these auditors when they do this job, they don't do any planning or risk estimation, which would lead us to the same result that the computerized systems they use are most helpful in the fieldwork phase.

Conclusion

After conducting the study, gathering data, and analyzing it, the findings chapter displays all the results the analysis came up with and discusses the critical ones. In this chapter the questions of the study are answered. The chapter is divided into two sections; the first section is the result section where all results are expressed. And the second section is the discussion section where the critical observations are discussed.

According to the results section, IT is found to be unimportant to auditors in Palestine; however, it is more important to international auditing firms than local

auditing firms. This result is frustrating and indicates to the limited use of IT in the auditing profession.

Another important result of the study is that 57.1% of auditing softwares used by auditors in Palestine are externally developed. Moreover, it is found that local firms use internally developed softwares more than international firms do.

One of the very promising findings of the study is that 44% of auditors in Palestine believe that their auditing softwares save 16-30% of the auditing engagement time. And 48% of them believe that time saved by using auditing softwares exceeds 30% of the audit engagement time.

In addition, the results point out that auditing softwares used in Palestine are most helpful in the planning phase in which the auditor is supposed to determine the nature and extent of auditing tests he/ she should follow. And they are least helpful in the wrap-up phase in which the auditor should insure that adequate documentation exists in the audit work papers, and that these work papers are well organized, indexed and referenced. However, in comparison between local firms and international firms, results indicate that auditing softwares used by local firms are most helpful in the field work phase in which the auditor carries out the test steps outlined in the audit plan. And they are least helpful in the wrap –up phase. As for international firms, softwares are most helpful in the planning phase, and least helpful in the wrap-up phase.

CHAPTER FIVE

Conclusion

This chapter is the final chapter in the study and it consists of two sections; the first is the **Summary** of the study, where the whole study is summarized and major points are mentioned again. The second section states the **Recommendations** of the study.

5.1 Summary of the Study:

Information Technology has become a major factor in all businesses and when performing any sort of tasks. The same is true for accounting and auditing; all accounting data now are processed using accounting information systems. Therefore, the auditing profession is also highly affected as the audit now is performed in a computerized environment and using computerized systems too. This use of technology increased accuracy, speed, and efficiency, decreased cost, and erased simple tedious tasks. In addition, using IT caused the rise of several risks such as the risk of losing important data, the risk that unauthorized person has access to secret information, the risk that all the information is derailed because of one error, and other risks. Still, no body can deny that worldwide there is a great dependence on such technologies in both accounting and auditing professions.

So many studies were conducted in the United States, Europe, South Asia, and other regions, to study the level of involvement of IT in the auditing and

accounting professions, and the impact of this involvement. Unfortunately, Palestine in particular, and the Arab countries in general lack such studies. Very few studies were found that tackled the auditing profession in general; therefore, this study is significant.

After developing the questionnaire to be used as the data gathering tool, it was distributed by email and fax to more 40 certified public accountants out of 156 according to the Palestinian Association of Certified Public Accountants. After almost one month, and several calls to each sample member, 28 questionnaires were received.

Data gathered was analyzed using SPSS. According to the results IT is found to be unimportant to auditors in Palestine, but it is found to be more important to international auditing firms than local auditing firms. Computerized auditing systems used by auditors in Palestine are most helpful in the planning phase and least helpful in the fieldwork phase. However, 79% of auditors in Palestine comply with ISA 401.

5.2 Recommendations:

According to the results and findings of the study, the following points are recommended:

1. A legislative body should be established to do the following activities:
 - Establish a law for the auditing profession: in cooperation with the Palestinian Legislative Council (PLC) a comprehensive law should be established that covers all aspects related to the Auditing profession in Palestine including what is mentioned below. However, as mentioned

before, a new law has been established but it has not been implemented yet because it needs further steps and protocols

- Set auditing standards and auditing steps that should be followed when an audit is conducted. and because the Palestinian Association of Certified Public Accountants have adopted the International Standards on Auditing (ISAs) , there would be no need to reestablish new standards as the ISAs can be adapted in accordance to the conditions and situation of the country.
- Issue ethical standards that each auditor must commit to.
- Prepare the CPA exams and manage them.
- Punish those who go against law.
- It should have a training department to prepare training programs and workshops, so that they can create awareness among the auditors of the developmental trends going on with regard to the audit profession, and train them with the necessary skills that they should obtain when doing an audit. they can also offer training programs or workshops to explain the benefits of certain auditing softwares, and the advantages of using IT tools within the auditing profession
- This legislative body should establish a Research and Development Department, to do researches whenever there is a necessity and to search for chances for improving the audit profession.

2. Auditors should keep into consideration that continuous modifications happen for every profession including auditing. And they should remember that

information technology is one of the major factors that affect auditing; therefore, they should keep track on such effects and their advantages and disadvantages, so that they can always follow the positive trends and avoid negative ones.

3. Auditing firms should obtain advance auditing softwares and provide the staff a comprehensive training on how to use them.

4. Accounting schools should customize accounting teaching methodologies in accordance with the development in IT and its relationship to accounting and auditing. In addition, these accounting schools should offer an Accounting Information Systems course as a compulsory course.

Other Recommendations for Further Research:

After nine months working on this study, facing several obstacles and difficulties, the following recommendations are articulated for those who would be doing similar or related studies:

1. To and target a smaller group such as auditors in a certain city, by doing so, it would be easier contacting the sample of the study and thus the results would be more accurate.
2. To conduct the study in cooperation with the Palestinian Association of Certified Public Accountants to guarantee the highest percentage of response.
3. It is better to use interviews as data gathering tool especially that such topics include difficult expressions and auditors in Palestine lack the

linguistic capacity. By interviewing them the researcher can explain the questions on the spot, and guarantee an accurate response.

References:

1. Abu Musa, A. (2002). Computer Crimes: How Can You Protect Your Computerized Accounting Information System? Journal of American Academy of Business, Cambridge. Vol.2. no. 1.
2. Abu Musa, A. (2002). Security of Computerized Accounting Information Systems: A theoretical Framework. Journal of American Academy of Business, Cambridge. Vol. 2. no.1.
3. Abu Musa, A. (2003). The Perceived Threats to the Security of Computerized Accounting Information Systems. Journal of American Academy of Business, Cambridge. Vol. 13. No. 1/2.
4. Abu Musa, A. (2004). Investigating the Security of Controls of CAIS in an Emerging Economy: an Empirical Study on the Egyptian Banking Industry. Managerial Auditing Journal. Vol. 19. No. 2.
5. Adhikar, A., Marc, L., And Zhanc, H. (2004). Firm Characteristics and Selection of International Accounting Software. Journal of International Accounting, Auditing and Taxation. Vol. 13. No. 1.
6. Alles, M., Kogan, A., and Vasarhelyi, M. (2004). International Journal of Accounting Information Systems. Vol. 5. No. 2. P 185- 2002.
7. American Institute of Certified Public Accountants. (2001). The Effect of Information Technology on the Auditor's Consideration of Internal Control in a Financial Statement Audit (SAS 94).

8. American Institute of Certified Public Accountants. (2002). Summary of Sarbanes- Oxley Act of 2002.
9. Anonymous. (2004). Integration and Efficiency. Accounting Technology. P. 10.
10. Arens. E., Beasley. (2003). Auditing and Assurance Services. Prentice Hall Business publications.
11. Bedard, J., Ehredge, M., Jackson, C., and Johnston, K. (2003). The Effect of Training on Auditors Acceptance of an Electronic Work System. International Journal of Accounting Information Systems. Vol. 4. No. 4. P. 227-250.
12. Berry, A. And Otley, D. (1980). Control, Organization and Accounting. Accounting, Organizations and Societies. Vol. 5. No. 2.
13. Bierstaker, J., Burnaby, P., and Thibodeau, J. (2001). The Impact of Information Technology on the Audit Process: an Assessment of the State of the Art and Implications for the Future. Managerial Auditing Journal. Vol.16. No.3.
14. Cerullo, M. (1985). General Controls in Computer Systems. Computers and Security. Vol. 4. No. 1.
15. Cerullo, M., Raval, V., Wilkinson, J., and Wong-ON- Wing, B. (2000). John Wiley and Sons, Inc.

16. Chaouch, B., Jagdish, P., and Sriram, R. (2005). Minimizing Cost of Continuous Audit: Counting and Time Dependent Strategies. *Journal of Accounting and Public*. Vo. 24. No. 1. P 61-75.
17. Chen, J., Hood, K., Russell, P., and Williams, B. (1997). Understanding Changes in Systems, Accounting and Auditing: The Impact of EDI. *Managerial Auditing Journal*. Vol. 12. No. 6.
18. Chen, Y. (2004). Continuous Auditing Using a Strategic- System Approach. *Internal Auditing*. Vol. 19. No. 3.
19. Cosserat, G. (2000). *Modern Auditing*. John Wiley and Sons.
20. Costantinides, S., and Spathis, C. (2003). The Usefulness for ERP Systems for effective management. *Industrial Management and Data Systems*.
21. Costantinides, S., and Spathis, C. (2004). Enterprise Resource Planning Systems' Impact on Accounting Processes. *Business Process Management Journal*. Vol.10. No. 2.
22. Daily, C., Luehlfig, M., Phillips, T., and Smith, M. (2000). Defending the security of the accounting system. *The CPA Journal*. Vol. 70. No. 10. p. 62
23. Damianides, M. (2005). Sarbanes Oxley and IT Governance: New Guidance on IT Control and Compliance. *Information System Management*. Vol. 22. No. 1. P. 77.
24. Dassen, R., Hayes, R., Schilder, A., and Wallage, P. (1999). *Principles of Auditing*. McGraw- Hill Publishing Company.

25. David, J., and Donnell, ED. (2000). How Information Systems Influence User Decisions. *International Journal of Accounting Information Systems*. Vol. 1. No. 3. P 178- 203.
26. Dodgson, J., Sangster, A., and Xiao, Z. (1997). The Relationship between Information Technology and Corporate Financial Reporting. *Information Technology and People*. Vol. 10. No. 1. P. 11-30.
27. Doost, R. (1999). Computers and Accounting: Where Do We Go from here?. *Managerial Auditing Journal*. Vol. 14. No. 9. p. 487- 488.
28. Dunn, C., and Gerard, G. (2001). Auditor Efficiency and Effectiveness with Diagrammatic and Linguistic Conceptual Model Representations. *International Journal of Accounting Information Systems*. Vol. 2. No. 2. P 223-248.
29. Edelson, L., Murphy, M., Parker, X., and Warren, D. (1993). *Handbook of EDP Auditing*. Warren Gorham and Lamont.
30. Elam, R., Rezaee, Z., and Sharbatoghlie, A. (2001). Continuous Auditing: The Audit of the Future. *Managerial Auditing Journal*. Vol. 16. No. 3.
31. Frank, K., and Lowe, J. (2003). Remote Access, Information Security, and the Internal Auditor. *Internal Auditing*. Vol. 18. No. 5.
32. Granlund, M., and Malmi, T. (2002). Moderate Impact of ERP on Management Accounting: A lag or Permanent Outcome? *Management Accounting Research*. Vol. 13. No. 3.

33. Guang, L., and Yang, D. (2004). The Evolution of IT Auditing and Internal Control Standards in Financial Statements Audits: the Case of the United States. *Managerial Auditing Journal*. Vol. 19. No. 4. p. 544
34. Hadden, L., Hermanson, D., Hill, M., and Invancevich, D. (2001). IT opportunities for Internal Auditors. *Internal Auditing*. Vol. 16. No. 4.
35. Helms, G., and Mancino, J. (1998). The Electronic Auditor. *Journal of Accountancy*. Vol. 185. No. 4. P. 54.
36. Hemani, B. (2005). What is Sarbanes Oxley, and What Does it Have to Do with Supply Chain Management. *Journal of Validation Technology*. Vol. 11. No. 21.
37. Huberty, P. (2000). Worldwide Audit Automation. *The Internal Auditor*. Vol. 57. No. 6.
38. Hunton, J. (2002). Blending Information and Communication Technology with Accounting Research. Vol. 16. No. 1.
39. IFAC. (2004). *Hand Book of International Auditing, Assurance, and Ethics Pronouncements*.
40. Irving, M. (2001). Audit Automation. *Information Strategy: the Executive's Journal*. Vol. 17.No. 4.P. 29
41. Ivancevich, S., and Rishel, T. (2003). Additional Opportunities for Internal Auditors in IT Implementations. *Internal Auditing*. Vol. 18. No. 2.

42. Jackson, R. (2004). Get the Most out of Audit Tools. *The Internal Auditor*. Vol. 61. No. 4.
43. Marks, N. (2004). The more things change *The Internal Auditor*. Vol. 61. No. 4.
44. McCuaig, B. (2005). A Deficient System. *The Internal Auditor*. Vol. 62. No. 1. P. 104.
45. McCartney, S., Manson, S., and Sherer, M. (1997). The Use of Information Technology in the Audit Process: Illustrations from Two Big Six Audit Firms. Paper Presented at Offered for Presentation at the Fifth Interdisciplinary Perspectives on Accounting cConference, University of Manchester.
46. McCartney, S., Manson, S., and Sherer, M. (2001). Audit Automation as Control within Audit Firms. *Accounting, Auditing & Accountability Journal*. Vol. 14. No. 1.
47. Peccarelli, B. (2004). Technology in Accounting. *The practical Accountant*. P. 10.
48. Pathak, J. (2003). IT Auditing and Electronic Funds Transfers. *Internal Auditing*. Vol. 18, No. 5. P. 28
49. Ramos, M. (2004). Just How Effective is Your Control?. *The Journal of Corporate Accounting and Finance*. Vol. 15. No.6. P. 29

50. Reinstein, A., and Rezaee, Z. (1998). The Impact of Emerging Information Technology on Auditing. *Managerial Auditing Journal*. Vol. 13. No. 8
51. Romney, M., and Steinbart, P. (2002). *Accounting Information Systems*. Prentice-Hall, Inc.
52. Sabri, N. (1993). Auditor Involvement in Non-audit Services: An Empirical Study in a Developing Environment. *Journal of International Accounting, Auditing and Taxation*.
53. Searcy, D., and Woodroof, J. (2003). Continuous Auditing: Leveraging Technology. *The CPA Journal*. Vol. 73. No. 5.
54. Sekaran, U., (2000). *Research Method for Business*. John Wiley and Sons, Inc.
55. Silltow, J. (2003). Shedding Light on Information Technology Risks. *The Internal Auditor*. Vol. 60. No. 6.
56. Smith, C., and Smith, M. (2003). Tools and Techniques for Documenting Accounting Systems. *Internal Auditing*. Vol. 18. No. 5.
57. Tucker, G., (2001). IT and the Audit. *Journal of Accountancy*. Vol. 192. No. 3.

المراجع العربية

1. أبو حاكمه, شعيب. (2002). معايير التدقيق الدولية بين النظرية والتطبيق. جمعية مدققي الحسابات الفلسطينية.

2. الجهاز المركزي للإحصاء الفلسطيني. (2004). المؤتمر الصحفي حول نتائج مسح الكمبيوتر والإنترنت و الهاتف النقال
3. الشيخ محمد. (2000). قياس مدى تطبيق ضوابط وقياسات الجودة في مكاتب تدقيق الحسابات العاملة في فلسطين. جامعة القدس, معهد العلوم التجارية والاقتصادية
4. جمعية مدققي الحسابات القانونيين الفلسطينية. (2001). مشروع قانون مزاولة مهنة تدقيق الحسابات.
5. جمعية مدققي الحسابات القانونيين الفلسطينية. (1997). ملتقى رجال الأعمال. ورشة عمل مهنة تدقيق الحسابات الواقع و المستقبل
6. علاونة, سعيد. (1999). مدى التزام المدققين الخارجيين العاملين في الضفة الغربية بمعايير التدقيق الدولية. جامعة القدس, معهد الدراسات العليا في العلوم التجارية و الاقتصادية, قسم المحاسبة
7. قانون مزاولة مهنة تدقيق الحسابات. (1961). قانون رقم (10) لسنة 1961
8. نيروخ, نضال. (2000). مهنة تدقيق الحسابات في فلسطين: الصعوبات وآفاق التطور. جامعة القدس, معهد الدراسات العليا في العلوم التجارية و للاقتصادية

APPENDICES:**Appendix One: the Questionnaire of the Study**

Dear Auditor,

I am an MBA student in Birzeit University; I'm doing a thesis about the impact of information technology on auditing in Palestine, and this is a questionnaire that aims to gather relevant data that will be used for the purpose of this study only; therefore, it's highly appreciated if you could spare me a little of your invaluable time to answer this questionnaire.

Thank you in advance,

Hind Muhtaseb.

Supervisor:

Dr. Nidal Sabri

Part one: General Information

1. You are a/ an

- A. Audit Partner B. Sole Practitioner C. Audit
 Manager
 D. Senior Auditor E. Junior Auditor

3. You work for

- A. a local auditing firm B. an international auditing firm

If you work for a local auditing firm please answer questions 4 and 5, but if you work for an international auditing firm please move to question 6

If you work for a local auditing firm,

4. Has your firm internally developed any audit softwares to help in carrying- out the audit functions?

A. Yes B. No

5. Has your firm procured any ready- made out of the shelve software to help you carry- out your audit functions?

A. Yes B. No

If you work for an international firm,

6. Is your international firm:

- A. One of the big four B. Ranked as one of the 5- 10 big firms
C. Ranked as one of the 11 and above big firms

7. Do you get auditing packages from your international firm?

A. Yes B. No

If yes...

8. These softwares that you get from your international firm are most helpful in: (please rank the answers from 1 to 5 with number 1 being the most helpful and number 5 being the least helpful)

() Planning phase () Field work phase ()

Finalization phase

() Wrap- up phase () Financial reporting phase

Part two: the use of computerized auditing programs.

1. The auditing software that you use is:

A. Externally developed B. Internally developed.

2. How much time your audit software save of the whole engagement with the client?

A. 0% B. 1-15% C. 16-30% D. More than 30%

3. At which phase do you believe your auditing software is most helpful?

(Please rank the answers from 1 to 5 with number 1 being the most helpful and number 5 being the least helpful)

() Planning phase () Field work phase ()

Finalization phase

() Wrap- up phase () Financial reporting phase

Part three: level of involvement of computerized programs in auditing tasks

		Ye s	N o
1	<i>In doing your audit tasks you use word processing and spreadsheet programs frequently</i>		
2	<i>Your auditing software provides on- screen help facilities.</i>		
3	<i>Your auditing software helps you obtain a basic overview of the client's business operations.</i>		
4	<i>Your auditing software assists you in the acceptance or rejection of the client</i>		
5	<i>Your auditing software can recalculate important ratios and</i>		

	<i>figures</i>		
6	<i>Your auditing software can assist in the design of the audit procedures that you should follow.</i>		
7	<i>Your auditing software can separate or combine the client's files according to your preferences.</i>		
8	<i>Your auditing software helps you in the selection of the sample from the client's data.</i>		
9	<i>You can calculate the inherent risk using the analytical procedures provided in your auditing software</i>		
10	<i>Your auditing software generates audit working papers automatically such as lead schedules and working trial balances</i>		
11	<i>Your auditing software can help you identify the transactions that have characteristics associated with fraudulent activities such as the major window-dressing transactions that may occur at the end of the financial year</i>		
12	<i>Your auditing software can prepare adjusted balances.</i>		
13	<i>Your auditing software can reclassify the financial balances of the client</i>		
14	<i>Your auditing software can do the posting to lead schedules and other working papers</i>		
15	<i>Your auditing software can identify the client's related party transactions</i>		
16	<i>When testing your client's control structure you reprocess the accounting data using your own auditing software.</i>		
17	<i>Do you have a specific audit software function that can evaluate the complexity of the client's accounting information system?</i>		
18	<i>Do you have a specific audit software function that helps you perform the subsequent review?</i>		

Part four: level of compliance with ISA 401

		Ye s	No
1	<i>Before starting the audit process, do you obtain a sufficient knowledge of the client's accounting information system?</i>		
2	<i>Does your audit plan depend on the client's internal control structure?</i>		
3	<i>Does your audit plan depend on the complexity of the client's accounting information system?</i>		
4	<i>Do you take into consideration the availability of data that can be extracted from the client's accounting information system in setting your audit plan?</i>		
5	<i>Do you take into consideration whether auditing the client's accounting information system needs specific computer skills?</i>		
6	<i>Does your assessment of the inherent and control risks depend on the complexity of the client's accounting information system's functions?</i>		

Part five: Auditing softwares:

In the table below are several auditing softwares used in Palestine, can you please put X beside the auditing software you use:

My client	
Audit System 2	
Auditor workstations (AWS)	
Case ware and Case view	
Audit Command Language (ACL)	
Ey Random	
Ey Micro START	

Ey Predictor	
Others (please name them)	

Appendix two: Audit Process

Phase One: Client Acceptance:

Objective: Determine both acceptance of a client and acceptance by a client.

Decide on acquiring a new client or continuation of relationship with an existing one and the type and amount of staff required.

Procedures:

- 1) Evaluate the client's background and reasons for the audit.
- 2) Communicate with predecessor auditor.
- 3) Determine the need for other professionals
- 4) Prepare the client proposal
- 5) Obtain an engagement letter
- 6) Select staff to perform the audit.

Phase Two: Planning the Audit:

Objective: Determine the amount and type of evidence and review required to give the auditor assurance that there is no material misstatement of the financial statements.

Procedures:

- 1) Obtain company and industry background information.
- 2) Investigate legal information.
- 3) Perform initial analytical procedures
- 4) Perform procedures to obtain an understanding of internal control.
- 5) Based on the evidence, assess risk and set materiality.
- 6) Prepare the audit program.

Phase Three: Testing and Evidence:

Objective: Test for evidence supporting internal controls and the fairness of the financial statements.

Procedures:

- 1) Test of controls
- 2) Substantive tests of transactions.
- 3) Analytical procedures
- 4) Tests of details of balances
- 5) Obtain legal letters

- 6) Obtain management representations letter
- 7) Final evidence accumulation and search for unrecorded liabilities.

Phase Four: Evaluation and Reporting:

Objective: Complete the audit procedures and issue an opinion.

Procedures:

- 1) Perform overall review.
- 2) Perform procedures to identify subsequent events
- 3) Review financial statements and other report material.
- 4) Perform wrap- up procedures.
- 5) Prepare matters of attention
- 6) Report to the board of directors.
- 7) Prepare audit report.

¹the Future. Managerial Auditing Journal. Vol. 16. No. 3

² IFAC. 2004. Hand Book of International Auditing, Assurance, and Ethics Pronouncements.